HARVARD BUSINESS REVIEW

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The NRA and the AAA
Public Utility Rate Making
Production Controls
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Manufacturing Activity

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THE NRA DECISION

By NATHAN ISAACS

ALTHOUGH the nation's press in the first days after the Supreme Court's decision against the constitutionality of the National Industrial Recovery Act[1] hastened to make the most of a clash between the judiciary and the executive in the New Deal, and although this phase of the subject may have great repercussions in the political future of the country, the real news item in this decision, from a lawyer's point of view, is exactly the opposite; it is the remarkable deference paid by the court to administrative construction[2] or administrative practice under the act.[3] Instead of reading the act in accordance with an old judicial tradition *magis ut valeat quam pereat* and merely declaring the case before the court outside of the scope of the statute as so read, the Supreme Court has accepted the executive interpretation which says that "fair competition" means whatever you will, and bowing before this interpretation has found the statute unconstitutional. Had "fair competition" been understood as the antithesis of "unfair methods of competition," the statute would have stood the constitutional test at least so far as the question of delegation of legislative power is concerned.

Likewise, it may be argued as to the second principal point that if "in or affecting interstate or foreign commerce" means "in or directly affecting" such commerce the act is unobjectionable though the rule made in its name be unstatutory, while reading the act to mean whatever the executive tried to make it mean, as illustrated by the case before us, renders the act itself unconstitutional. The court thus fails to recognize a rather simple distinction between two kinds of objection to an administrative order: first, that the statute under which it is made is unconstitutional; second, that, whether the statute is good or bad, a particular order made under it is unstatutory. If unstatutory orders can render a statute void in this way, there is a far greater menace confronting the

[1] *A. L. A. Schechter Poultry Corporation* v. *U.S.*, 55 Sup. Ct. 837. [2] *Ibid.*, 844. [3] *Ibid.*, 853.

New Deal or any other modern legislative plan than would be apparent on even the most careful reading of the enactments. No longer can a lawyer undertake to render an opinion as to the constitutionality of a statute calling for the use of administrative machinery without going outside of the four corners of the statute and studying the administrative construction, thousands of pages of it, or the administrative practice to be observed all over the country. Postponing for a moment consideration of the legal foundations and the effect and common sense of the Supreme Court's inarticulate major premise, let us see how the objectionable executive interpretation has manifested itself.

Quite early in the feverish period of codemaking it was possible to discern a discrepancy between the National Industrial Recovery Act as a law in books and the same act as a bit of law in action.[4] Soon the vast army of those entrusted with its administration—from the President and his chosen deputies down through the trade associations, the code authorities, the labor representatives, the petty bullies who shook their fists in the faces of worried shopkeepers or innkeepers and threatened them with dire consequences because of anonymous accusations of having violated impossible code provisions—seemed to be marching ahead on the assumption that the act contained sealed orders that had little or nothing to do with the revealed words "codes of fair competition." Codes were filled with provisions against *aggressive* competition, against *uncomfortable* competition, against *new* competition, against all kinds of competition, but there was very little regard for the idea of fairness, and sometimes no regard for the relevance of any kind of competition in the rules and regulations they embodied.

Many of the provisions were simply and directly "anti-consumer." They were beautifully calculated to furnish an excuse for the lazy or harassed or stupid or unfair dealer, who was pleased to shrug his shoulders and say, "Sorry, Madam, but the NRA won't permit us to do that. . . . You can't pick your goods. You must take them as they come or leave them. . . . There is no use in haggling about the value of the car you are turning in. It may be in fine condition and all that, but the NRA fixes the allowance. . . . We know that your credit is good, and personally we are in a good position to extend credit and should like to do so, but the NRA says 'No'. . . . We could take a chance and make you an allowance on your old radio or washing machine or what not, but the NRA forbids. . . . I'd be glad to throw in a little extra service and make it worth your while to deal with me, your neighborhood dealer, but I'm afraid I'm being watched." We are all familiar with these stories, and with their aftermath of bootlegging: "I'll do it but don't tell anybody." Another chapter was being written in the history of American lawlessness. Competition was being driven underground. What had been the life of trade was becoming the life of racketeering.

There were other features of the codes as actually drawn and enforced that were even less in accord with the idealistic book-form of the law that gave rise to them. The anti-consumer element was perhaps necessary, in spite of the extravagant boasts of those

[4] Isaacs, Nathan, and Taeusch, Carl F., "The NIRA in the Book and in Business," 47 *Harvard Law Review* 458 (1934).

New Dealers who thought they could lower the price of meat while raising the price of cattle and still give a good wage and an increased profit to everyone in between the farmer and the consumer. These lyrical advocates of the New Deal have never explained their economic theory and of course have never carried it out in practice. If wages were to be increased and employers permitted to get together so as to reimburse themselves for the extra cost, of course the consumer would have to pay the bill, and he might even be glad to do so.[5] But some codes went further. They began to frame standardized contracts of sale or standardized stipulations to be read into every sale of particular kinds of goods by prescribing terms that tended to work a hardship, if not a fraud, on the public. They tampered with implied warranties and standards of goods and services. They began to give definitions to trade words that did not tally with the ordinary meanings of those words as understood by the public. Perhaps worst of all, they left out the ingredient that they were supposed to be made out of: the rules, principles, and standards of fair competition. Even where they took the trouble to pretend to talk on this subject, they indulged in pious nonsense which added nothing to the obvious; of course it is unfair to stab one's competitor in the back when he isn't looking. Perhaps the most stupid as well as misleading bit of publicity issued by the Administration in the entire history of the act was a compilation of several thousand such "unfair practices" listed in the codes and put forth as the confessions of the sick and repentant business world.[6]

It may be futile, so far as this particular experiment is concerned, to ask now whether a little heed might not well have been given to the warnings of those who suggested that a statutory authorization of Codes of Fair Competition should not be misused as a charter authorizing general legislation by administrative officers. Yet the inquiry may have significance for other New Deal legislation suspended precariously on the interstate commerce clause, the mail clause, or the money and banking clauses, and granting powers to commissions hardly distinguishable as more or less vague than the term "Fair Competition."

In the first place, it is not true that no other type of decision was possible in this case. Perhaps the court chose the most statesmanlike way of handling the situation, but the point is that it deliberately chose this way. It could have kept out of the stratosphere of constitutional limitations. If the sale and slaughter of chickens in New York is outside of the purview of interstate commerce, that is enough to decide the case, as the act itself limits its penalties specifically to transactions "in or affecting interstate or foreign commerce." Or, if there is any doubt about that, some terms of the code or the whole Live Poultry Code might have easily been criticized as unstatutory—*ultra vires*—and the warning sounded that all codes would have to be redrawn and kept closely not only within the power of Congress but within such a short range of delegation as that of the Federal Trade Commission. The choice of the Supreme Court to decide the whole matter at once is

[5] This necessity was recognized by the more responsible leaders. Thus, the President's statement on signing the act contains the words, "I am fully aware that wage increases will eventuallyrai se costs."

[6] Release of June 16, 1933.

consistent with its attitude in the government obligation gold clause cases.[7] After a detailed discussion criticizing the position taken by the Government, we reach the sudden anti-climax that the case is not properly before the court. Had the court begun at that end, the preliminary dictum would have been unnecessary.[8] Its statesmanlike willingness to face the whole constitutional question may be praised, or its political-mindedness in going out of the way to criticize coordinate branches of the Government may be condemned, but the course that it has adopted must not be overlooked as a factor in the Administration's problems.

The court examines, first, the question of delegation of legislative powers, and, secondly, the question of the limits of interstate commerce. A third question, the applicability of the due process clause, was raised but not considered.

The Delegation Aspect

In the long run the question of delegation may not be vital. If Congress is told that it cannot leave to the President uncontrolled or "uncanalized" discretion in such matters as when or whether to exclude hot oil from interstate commerce,[9] Congress can of course itself legislate directly to exclude such hot oil from interstate commerce or it can carefully lay down the conditions under which the President is called upon to issue a proclamation that will put its law into operation. If the Supreme Court in this case has pricked out another point along the line that separates adequate from inadequate specification of policy on the part of Congress, Congress may find law-making a more detailed and tedious task than it supposed on the day when it enacted the blank authorization of codes that has now been rejected, but the objection goes to the form rather than to the matter. It is easily possible to exaggerate what the court has done even in this particular. It may be argued that it has suddenly called a halt or even declared an about-face in this whole matter of administrative law after a half-century of consistent extension of the power of Congress to delegate details of legislation to administrative bodies. The distinction laid down in connection with the first reciprocity tariff act[10] between ascertaining the event upon which the expressed will of the legislature is to take effect and the making of the law, has at times seemed a sort of pious sham on the basis of which commissions have been allowed to make rates, establish rules and regulations, and even draw the line between fair and unfair methods of competition—the very theme, if the words mean anything, on which this case goes to pieces. As a corrective for this notion of what the Supreme Court has done, the concurring opinion of Mr. Justice Cardozo is helpful. If this were an act declaring the policy of Congress to stamp out "unfair competition" in the old common law sense, or "unfair methods of competition," as that term is understood in the Federal Trade Commission Act, there would be nothing objectionable in delegating power to an executive or administrative body to discover

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[7] *Nortz* v. *U. S.* (1935) 55 Sup. Ct. 428; *Perry* v. *U. S.* (1935) *ibid.*, 432.

[8] Balch, F. N., "The Gold Clause Decisions," XI *Bulletin of the Harvard Business School Alumni Association* 174, 180 (May, 1935).

[9] *Panama Refining Co.* v. *Ryan*, 293 U. S. 358, 55 Sup. Ct. 241 (1935).

[10] *Field* v. *Clark*, 143 U. S. 649, 12 Sup. Ct. 495 (1892).

specific offenses in particular trades and denounce them—whatever that means—precisely as the Federal Trade Commission has been authorized to do with the full and repeated approval of the Supreme Court. Mr. Justice Cardozo makes another point clear; it is possible that he does not see eye to eye on this with the Chief Justice. He is not concerned about the part played by business groups in the drafting of codes, as it is the President's *imprimatur* that gives them the force of law. Furthermore, he does not seem to be concerned about the distinction between delegation to the President and the more common form of delegation to a commission. What he is concerned about is the scope of the power delegated. Is the power to create Codes of Fair Competition limited to questions of fair and unfair methods of competition or is it a virtually unlimited power to deal with anything and everything in business? If the former interpretation prevails there is no unconstitutionality in this delegation; if the latter, it is unconstitutional.

The whole court takes the view that the Congress in using the words "fair competition" has neither fairness nor competition in mind and that the term is practically to be ignored in reading the statute. Three reasons are given for this interpretation: First, that the Government in its argument made no suggestion to the contrary. This is not pressed. It is obviously a dangerous and inadequate view that sees only a debating game between two sets of lawyers in a matter of such national importance. The court could easily and should ignore the contentions of the parties and read the statute itself. No doubt it did so. A second reason given in both opinions is, to say the least, debatable: that the words of the statute require such an interpretation. The court's reasoning on this point ignores the ordinary meaning or any possible meaning of the words "fair" and "competition" and also the whole history of the terms in our law. It declares that the words are ambiguous and that they are not antithetical to the "unfair methods of competition" of the Federal Trade Commission Act. It is here that the court is on the thinnest ice. Paragraph b of Section 3 certainly points in the opposite direction:

> After the President shall have approved any such code, the provisions of such code shall be the standards of fair competition for such trade or industry or subdivision thereof. Any violation of such standards in any transaction in or affecting interstate or foreign commerce shall be deemed an unfair method of competition in commerce within the meaning of the Federal Trade Commission Act, as amended; but nothing in this title shall be construed to impair the powers of the Federal Trade Commission under such Act, as amended.

The only words of the act relied on are the allusions in Section 3 to the policy of the act, which policy the court by the admission of the Government takes to be the agglomeration of high but vague purposes recited in Section 1. The suggestion is that these allusions make it clear that in the contemplation of the statute a "Code of Fair Competition" is a code on all these subjects regardless of the meaning of the words "fair" and "competition." The point is so important that it calls for an examination of these allusions to policy. There are three of them. One has nothing to do with the case (it is in the tariff clause); one is clearly restrictive (assuming that we have a code of fair competition, properly so called, the President may not approve it unless,

in addition to all other requirements, it will also "tend to effectuate the policy of this title"); and the third, though expansive, involves only the limited type of expansion that can be called exceptions, exemptions, and conditions. There is no clear suggestion that a code may contain anything but provisions on the subject of fair competition. It is true that in another part of the act there is a provision that certain concessions shall be "a condition of every code." Yet the subject matter of the code proper is nowhere described as anything a breach of which cannot properly come within the terms of the Federal Trade Commission Act. It is clear that even a breach of such a "condition" as laid down in Section 7, the labor clause, is not embraced in the penal and enforcement clauses of Section 3, except so far as this is accomplished in Section 7 itself. Obviously the reliance on the terms of the act to prove that the words "fair competition" are used in a fantastic sense is the weakest link in the Supreme Court's chain of reasoning. A double or triple strain is therefore put upon its third argument, its controlling argument, presented alike in both opinions though brought in from different sides, that executive construction establishes the broader and unconstitutional significance. Of course we have heard of a doctrine of executive construction. It is a purely secondary help, however, to be resorted to when there is actual ambiguity. It is the function of such rules of construction to remove ambiguities, never to create them. The rule must furthermore be applied along with all other rules of construction, such as that familiar one which bids the court make every effort so to construe a statute when its constitutionality is at stake as to uphold it rather than so as to contravene the Constitution.[11] Furthermore, it is the practical construction of the executive that is referred to rather than such political pronouncements as that of the Secretary of Agriculture quoted by Mr. Justice Hughes. On the other hand, there was an abundance of practical interpretation, and it was a fact that the executive had a great deal to do with the planning of the statute as well as its execution, and the Court concluded on the whole that the statute did not mean what it said when it said "fair competition."[12]

Let us not overlook the layman's justification of such realism. He is not concerned with the form of the law. He is not convinced by the rule of interpretation which bids us pick up a statute by its four corners and ignore the arguments advanced in the legislature while the act was pend-

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[11] *Cf. Plymouth Coal Co.* v. *Pennsylvania*, 232 U. S. 531, 34 Sup. Ct. 363 (1914): "And, even aside from the consideration just adverted to, it is a general fundamental rule that if a statute be reasonably susceptible of two interpretations, one of which would render it unconstitutional and the other valid, it is the duty of the courts to adopt that construction which will uphold its validity; there being a strong presumption that the law-making body has intended to act within, and not in excess of, its constitutional authority. Sinking Fund Cases, 99 U. S. 700, 718, 25 L. ed. 496, 501; *Mugler* v. *Kansas*, 123 U. S. 623, 661, 31 L. ed. 205, 210, 8 Sup. Ct. 273; *Knights Templars' & M. Life Indemnity Co.* v. *Jarman*, 187 U. S. 197, 205, 47 L. ed. 139, 145, 23 Sup. Ct. 108; *United States ex rel. Atty. Gen.* v. *Delaware & H. Co.*, 213 U. S. 366, 407, 53 L. ed. 836, 848, 29 Sup. Ct. 527."

[12] *Cf.* the language of Mr. Justice Holmes in his dissent in *Federal Trade Commission* v. *Beech-Nut Packing Co.*, 257 U. S. 441, 457, 42 Sup. Ct. 150, 156 (1921): "And to come back to the words of the statute I cannot see how it is unfair competition to say to those to whom the respondent sells and to the world, you can have my goods only on the terms that I propose, when the existence of any competition in dealing with them depends upon the respondent's will. I see no wrong in so doing, and if I did I should not think it a wrong within the possible scope of the word fair."

ing. He is not impressed by the theory that Congress legislates even when the President writes the law and wields a whip. To him, the Administration was the writer of this law, Congress rubber-stamped it, and the Administration presumably knew precisely what it meant by the law. Hence, if it said "fair competition" with its tongue in its cheek and meant anything the President wants to attack, we had better deal with the act as meaning not what it said but what the President meant. For, continues the layman, if instead of erasing the statute we leave it on the books with its literal meaning, we shall please nobody and accomplish at most something that was not intended. In this particular instance it may have been argued further that the statute if interpreted in ordinary ways was unnecessary. Congress had already declared "unfair methods of competition" illegal. It had already given an administrative body all the leeway that it could in ascertaining and denouncing particular practices to which the term might reasonably under particular circumstances be applied.

There is irony in turning realism in this way against the "brain-trusters" who thought they were fighting under the banner of realism in Constitutional Law.[13] The engineer is hoist on his own petar. Instead of ignoring the mere words of the Constitution in a magnanimous resolve to carry out its ultimate purpose to serve the people, realism now ignores the mere words of the statute in an equally magnanimous resolve to see what there really is behind the thing—and finds that reality objectionable. Mr. Justice Cardozo, in describing what has actually been attempted under the act as well as what has been preached, shows a keen interest in the law in action rather than the law as it appears in the books and concludes, "This is delegation running riot." But in going so far as to test the constitutionality of a law in action rather than of a law in books, one may ask, are we not allowing our realism to run riot?

The Chief Justice has none of the flavor of this new realism about his opinion. He reaches his conclusion almost through an opposite—shall we say "idealist"—line of reasoning. He expects to find some correspondence between the avowed policy of an act and its methods. That is intensely difficult in the National Recovery Act. With great pomp and ballyhoo a statute is promulgated to which is officially given the grandiloquent name, the National Industrial Recovery Act. It opens with the most blatant promises ever recorded in legislative history. *Parturiunt montes.* Then the ridiculous mouse squeaks forth: "Try to be kind to your competitors for two years." It *is* a bit silly. It *is* puzzling to figure out what theory of economics or of theology the gentlemen in Congress or out of it who propounded the act had in mind. One looks in vain for a connected explanation in the tens of thousands of printed pages or the myriad of speeches that this act has called forth. But does it follow that Congress must therefore be using its words in a recondite sense? So Mr. Justice Hughes thinks. But is not the compliment to Congress undeserved? Actually Congress found the country in bad shape. Under orders from the White House it lashed forth to strike down personal devils: the bankers or money changers, the bro-

[13] *Cf.* Frankfurter, Felix, "Hours of Labor and Realism in Constitutional Law," 29 *Harvard Law Review* 353 (1916).

kers, the exchanges, mean employers, unfair competitors, gouging public utilities, grasping mortgagees, mysterious holding companies. Does it follow that Congress really thought these personal devils were to blame for our predicament and that by legislating away meanness and sharpness, grasping traits and unfairness, it would bring about a speedy recovery? Perhaps, and perhaps not. But it certainly does not follow that any lack of relation between ends and means is to be attributed to the theory that Congress was using word symbols instead of English words. It is just a bit more likely that Congress did not know what to do to carry out its excellent wishes.

So far, then, as the court's decision on delegation goes, it seems that the essential deviation most necessary in rewriting a National Recovery Act is a preamble or postscript to the effect that this act means what it says—that in authorizing "codes of fair competition" it does not mean to authorize codes on everything under the sun. Or if that isn't enough to accomplish the purposes in view, it may be wise to canalize at least equally clearly and deeply the other details as to which Congress wishes to express a policy and as to which it feels, as it may well, incapable of drawing up the rules for a vast variety of industries. Congress will do well not to attempt to canalize by means of a highflowing senatorial Fourth of July oration like Section 1 of this act. In fact, so far as it can descend to details and exclude hot oil from interstate commerce instead of saying that the President may do so, it might just as well speak out. Incidentally, if it is really interested in unfair competition it may do well to rewrite Section 5 of the Federal Trade Commission Act instead of creating another bureau with the same function as that given to the Federal Trade Commission.

The amendment might wisely copy much of the language of the National Industrial Recovery Act. The term "unfair methods of competition" declared unlawful in Section 5 might be made to include violations of standards set forth in codes drawn up by representatives of business on the invitation of the Federal Trade Commission and subject to its approval. A code enforced by the Federal Trade Commission itself in the absence of one adopted by industry, or the imposition of conditions, exemptions, and exceptions (all understood in a reasonably restrictive sense) by the Commission might also be provided for, and special reference might be made to the competitive aspects of labor and the partial withdrawal of anti-trust law restrictions in its behalf.

The Interstate Commerce Aspect

The interstate commerce aspect of the case is, as the Administration clearly sees, a much more serious difficulty in its way. Obviously, the draftsmen of the act meant to go as far as possible under the Constitution when they spoke of transactions "in or affecting interstate or foreign commerce." They had in mind pretty clearly all the extensions into what looked like intrastate matters that had been found to constitute interferences with interstate commerce—the picturesque decision in the Louisiana shrimp case, for example.[14] This was their general strategy. The tactics of the Administration can be easily

[14] *Foster-Fountain Packing Co., Inc., et al. v. Haydel et al.*, 278 U. S. 1, 49 Sup. Ct. 1 (1928).

explained in greater detail. Why press the poultry case rather than the lumber case?[15] They were misled by a recent Supreme Court decision[16] which upheld Federal jurisdiction as to a conspiracy in this very business in New York, in which there was interference with the unloading, the transportation, and other matters operating "substantially and directly to restrain and burden the untrammelled shipment and movement of the poultry" in interstate commerce. So it seemed that the hurdle of proving that the transactions in question "affected" interstate commerce was passed in this particular set-up. The court drew a distinction, a distinction that brings us somewhat nearer to an effective demarcation of Federal jurisdiction in matters commercial. The distinction is between directly and indirectly affecting interstate commerce. To use or threaten violence around freight cars and interfere with the removal of goods in transit directly affects interstate commerce. To sell goods that have been brought into the state in this or that way, by these or those terms, affects interstate commerce only indirectly. It would furthermore greatly limit the scope of the act, perhaps fatally limit it, but it would not render the act unconstitutional. It is true that the act does not take the usual and decent precaution of defining commerce, as used in the act, to mean interstate commerce. But neither do state laws take the precaution of saying at every step that they mean commerce within such a state, or murder within such a state, or marriage or land or court jurisdiction within their own borders. That is perfectly obvious interpretation and so, by this time, when Congress undertakes to regulate commerce, unless it forecloses such interpretation by its words, we ought to give it credit for meaning such commerce as Congress may regulate constitutionally and none other. But in this act, in fact in the very section before us as well as in five other places in the act, Congress expressly alludes to interstate or foreign commerce. The court leaves considerable doubt whether its insistence on the word "directly" is an interpretation of the act or a declaration of its validity as written.

Is there any point in drawing a Federal act attempting to regulate, by codes or otherwise, transactions in or directly affecting interstate commerce and leaving all other transactions to state regulation or to self regulation? Impatience coupled with the conviction that the state governments are dead will lead to agitation for constitutional amendments giving the Federal Government extensive powers to make uniform the labor conditions and the business practices throughout the country. But before being too sure of the impotence of the Federal Government to accomplish a great deal within the terms of the Constitution for better labor conditions and better regulation of industry, let us consider its record so far.

The Federal anti-trust laws from the beginning frankly accepted the limitations of the interstate commerce clause. The courts have interpreted them so as to give them a broad scope. Business soon found it impracticable so to separate state from interstate matters as to escape for any large part of its activities the warning hand of the public prosecutor or, for the last decade, that of the Federal Trade Commission. Furthermore, states were not

[15] *U. S.* v. *Sutherland*, 9 F. Supp. 204 (1935).

[16] *Local 167* v. *United States*, 291 Sup. Ct. 293, 54 Sup. Ct. 396 (1934).

slow to follow with their own imitations of the Federal anti-trust acts, so that whoever escaped Scylla encountered Charybdis. Nor is it a valid distinction to say that by its very nature a large monopolistic combination is forced to operate in several states. Its specific operations are all largely intrastate or can be made so. Still the crossing of state lines in business cannot be avoided—at least it has not been avoided so as to defeat the operation of the Federal anti-trust legislation. Nor have other Federal acts under the interstate commerce clause either proceeded or fared differently. The Pure Food and Drugs Act did not to any appreciable degree strengthen state lines in the set-up of the businesses affected. Nor did the Meat Inspection Act, nor the Interstate Commerce Act. Nor have rigorous requirements for national banks ever led to a rush for state charters. The Federal Government has a vast jurisdiction for which to legislate. It can fearlessly impose its standards for this domain and count on cooperation and imitation by the states within a very short time. Wherein, then, are the requirements that the National Industrial Recovery Act was supposed to serve so different as to make Federal action, where Federal action is allowed by the Constitution, futile? One answer is the emergency. The trouble with that answer is that the act is not an emergency act at all. It is a reform act looking towards the future. It imposes burdens on the present. It is seriously misnamed. It undertakes reforms suddenly, impatiently. In that respect it is like prohibition and was meeting the same fate, quite apart from the question of constitutionality. There is a distinct emergency calling for taking millions of people off the dole. The raising of wages of persons already profitably employed and the bringing of an American Federation of Labor millennium—even the discontinuation of loss leaders in department stores—may be exceedingly desirable ends, but there is no emergency connected with them.

Another set of answers has to do with specific gains under the National Industrial Recovery Act—the abolition of child labor, for example. As to these it is contended that state action is inefficient because of the competition among the states—that there are "chiseler" states. Of course child labor has long been abolished in many of the states in spite of this difficulty, and progress has been made in others. It is even possible that experience under the act while it lasted will give an impetus to the enactment of more state legislation or the adoption of a Federal constitutional amendment on the subject. But is interstate competition necessarily bad? Certainly its supposed potency has been disproved by the whole history of social legislation in our states. When mining laws were first considered, the operators honestly believed that anything adding a cent a ton to their burden would drive the coal mines of a state out of business. Mining laws did not have that effect; neither did factory acts or workmen's compensation laws. Remember the pretense that the reason why state prohibition could not be enforced was because of lack of uniformity in state laws. Was Federal prohibition better or worse? There are many practical ways, which are not unconstitutional, to work for uniformity of state laws or at least decent reciprocity where either is desirable. The existence of nation-wide pressure organizations, such as trade unions and

trade associations, is a tremendous force. The imitativeness of legislatures is another. The force of national political parties has also been felt. The history of American legislation can be written in terms of waves moving across the country, with or without Federal aid, with or without interstate pacts. Among others may be mentioned the wave of various types of factory acts, of anti-scrip acts, company store acts, hours of labor for women acts, Torrens acts, fraudulent conveyance acts, and so on throughout the statute books. This is a slower process than Federal usurpation would be, but it is the traditional American process and there is no reason to believe that it has ceased to work or that a business slump which has nothing to do with these details constitutes an emergency calling for the sudden accomplishment of all the long cherished and frequently expensive aims of reformers.

The court's suggestion that transactions which do not directly affect interstate commerce are beyond the regulatory power of Congress, as well as its earlier suggestion that the power to regulate interstate commerce does not carry with it powers that may not fairly be called regulation,[17] gives a renewal to the charters of the states and a new emphasis on the duties of the states in these matters.

The real reason for dissatisfaction with the ordinary mode of procedure in recognizing the line of cleavage between state and Federal jurisdiction in this case may turn out to be something entirely different: it is disappointment in having a halt called to Federal usurpation of state power. Those interested in the Federal side of the question at this particular moment are a very different group from those who have advocated centralization in the past, but their motives, however loftily phrased, are no less easily traceable to their own economic or political advantage or supposed advantage. The Federal Government is not really concerned about the order in which chickens are sold out of a crate, nor in the methods or even the prices charged by dry-cleaners in the basements of New York City. That Government is deeply concerned over the coming to political maturity of farm blocs and labor blocs, and the rising tide of animosity in various parts of the country against chain stores and stock manipulators and money lenders and other visible offenders on whom to wreak vengeance for the misfortunes suffered by a great many people during a severe depression. It has made promises to these groups—perhaps it felt constrained to do so to avoid violent uprisings—without first consulting its constitutional powers to redeem those promises. It is difficult to retrace the steps by which it was misled to make such promises or intelligent Americans induced to accept them. Every schoolboy knows that the powers of the Federal Government are enumerated powers and he has but to read a few pages to find out that Congress has no power to regulate intrastate commerce, none to control farming, no special powers to interfere in the age-old disputes between employers and employees. And yet dissatisfaction with simple straightforward ways of dealing with the regulation of industry comes down to the blasting of the hope that the Federal Government might find some way of controlling labor relations by riding them in as a condition in connection with an

[17] *Railroad Retirement Bd. et al.* v. *Alton R. Co.*, 55 Sup. Ct. 758 (1935).

unrelated subject on which it has successfully legislated. The Federal Government can legislate as to labor under its jurisdiction. It has done so in the past and no doubt will do so again. But in this particular case, if, as has been charged, the whole National Recovery Act was a disguised labor act, there is poetic justice in its having been thrown out of court because of the unfortunate camouflage with which it surrounded itself. We shall no doubt witness agitation in favor of giving Congress constitutional power over labor relations. The agitation may be successful. Whether it will be feasible to give control of labor relations to the Federal Government without giving the same Government plenary control of other aspects of business remains to be seen. But before we despair of state action let us consider several facts—facts which have as little to do with the present emergency as this whole labor agitation. In the first place, labor legislation by the states has progressed with giant strides in the last generation. There may be reason for impatience, but there is none for despair. In the second place, by no means the only force at work for the betterment of labor conditions is labor legislation. The unions should not be so modest as to suggest anything of the sort. True, they have operated in a large measure through state legislation, and although it would be convenient to substitute one Washington lobby for forty-eight state lobbies it is doubtful whether any amendment can be passed which will go so far as to take away from the states not only the matters mentioned in Section 7 of the National Recovery Act but conditions of labor, safety of machinery, factory and mine inspection, the labor contract, workmen's compensation, employment bureaus, and a hundred other subjects in which labor lobbies are and should be keenly interested.

Conclusion

The whole opinion, like those of a century ago, will have to be read and re-read, not merely as the means of settling a dispute or a series of similar disputes, but as a great political document. It has redefined the boundaries that separate the functions of the state from those of the nation. It has reestablished the line of cleavage between the legislative and the executive branches of government and reaffirmed the supremacy of the judiciary as the interpreter of the Constitution. It has definitely recognized the evolution of administrative law as a kind of due process, but it has set limits, if not to the ultimate possibilities at least to the rate of acceleration in its development, and it has sounded a warning that under administrative procedure it may be necessary to view a statute in the light not only of its antecedents but of its application before we can fit it into the constitutional framework. In all of these essentials the opinion merely reaffirms, or at most defines, old established fundamental principles. But in the very process of their reestablishment under conditions prevailing today there is demonstrated the vitality of the constitutional system of the United States in comparison with the younger and generally more feeble constitutions of those countries in which democracy has had less time to take root.

AGRICULTURAL ADJUSTMENT: A STEP IN THE EVOLUTION OF AGRICULTURAL POLICY

By M. L. WILSON

AGRICULTURAL adjustment as a governmental policy is now two years old. It has friends who believe in it as it exists. It has opponents who would repeal the Act of Congress under which it became a formal national policy and who would be done, once and for all, with this form of governmental activity.

As extremists, both serve useful purposes in exposing to light strong and weak points in the planning and control features of the Act. But, in my opinion, there is disappointment ahead for both groups, as there usually is for extremists. I regard adjustment in its present form as a phase in the evolution of American farm policy, important as it stands, but with its greatest significance bound up with the future.

Adjustment has been condemned from the right as "revolutionary," and from the left as an opiate possessed of too mild a quality to meet the grave and chronic nature of agriculture's ills. It has been lamented as a device certain to lead to "regimenting" the American farmer, while at the same time it has been accused of falling short of the degree of discipline necessary to assure that the program will be carried out as planned. It is denounced as the parent of restraints which are unconstitutional, uneconomic, unsocial and, worse still, unbiblical.

It is indicated as a step-child of "scarcity economics," as opposed to "abundance," even by those who are given in other hours and other days to scoffing at "abundance" as merely a catch-phrase. It is accused of tending to impose a system of inflexible prices by groups who defend a system of inflexible prices in the patterns of other groups. It is charged with breeding a new agrarian class-consciousness detrimental to other groups whether they are loosely or cohesively organized. It is condemned as being, when unmasked, little more than a device for taxing the consumers of farm products for the benefit of producers. It is heralded as the destroyer of farm export markets and as being an undue interference with "natural adjustment" which, relying upon the survival of the fittest, would lead to eventual relief through elimination of sub-marginal producers. It is also accused of driving out sub-marginal producers, and, thus, of forwarding the principle of "survival of the fittest."

Uniting these and other accusations provides a grave and formidable bill of particulars. But for each argument against adjustment there appears another for it. The task of balancing one against the other is an interesting pastime, but it is not my purpose to engage in a recitation of that kind here. It is rather my intention to examine adjustment, not in terms of immediate objectives or immediate significance, but in the light of its background and the currents which have grown up through the years to relate it to the future. Examined as one of these currents, we may see that adjustment,

despite shortcomings by reason of heritage or environment, represents a strong and logical response to factors and influences which are neither new nor temporary.

Backgrounds of the Adjustment Act—World Conditions

Agriculture in this country, by and large, grew up during a time which was favorable for its development. Setbacks there were, and some of them were severe. But most of them were regional or local in their effects. After one of the worst of these setbacks, in the length of time it continued, the size of the area affected, and in degree of intensity—that attending the panic of 1893—a new period of expansion began. Starting at about the time of the Spanish-American War, there was an almost continuous expansion of agriculture for two decades. It was contemporary with expansion in European industry. The United States was rich in agricultural resources, with farms and farmers in a favorable position to gather in the harvest of technological advance representing the products of inventors and scientists. This made it possible to make steady gains in economical production.

The size of farms and the patterns of farming had not been fixed so definitely but what adjustments to new technical advances were possible. Consider the rapid adaptation of grain binders to American farms, which found a ready welcome on 160-acre and 320-acre American farms; while European peasants with small, irregular tracts were unable to employ them to the same advantage, even should salesmen have triumphed over tradition, poverty, and ignorance. Here there was not the pressure of a population which in Europe made relatively inflexible man-land ratios during a time when flexibility was essential for the transition of agriculture to new patterns, with the machine as their motif.

Furthermore, our position as a debtor nation contributed to making the flow of farm products to European ports a natural and desirable current. The World War opened at a time of relatively stable farm conditions in this country and at a time when there was a growing consciousness of the close relationship between the flow of export farm products and the flow of interest on American indebtedness to English, Scotch, German and other European capitalists. The War brought on an acceleration of the flow of these products, particularly wheat, cotton, and pork products. It must be remembered that by this time American industry had expanded, and that the War provided an extraordinary opportunity for its further expansion. The flow of interest soon changed into a flow of capital loans. Before the War was over the United States had changed from the status of a debtor nation to the status of creditor. Here was a shift of deep significance to American farmers.

The abnormal impetus to the expansion of American agriculture and industry during the War could only result in pain unless adequate markets for both could survive the war emergency. Fortunately for American industry, and temporarily for American agriculture, the flow of capital to Europe did not cease with the Armistice. But it was inevitable that Europe could not continue both to buy and to borrow from the United States without a compensatory flow of goods and services.

European countries strove to revive both their agriculture and industry. But agriculture responded the more rapidly. Industries required expensive

rebuilding and modernization if they were to meet the challenge of American industry, now a much more serious challenger for world markets. The corps of skilled workmen required by European factories, their ranks torn by recruiting and other war demands, could not be provided with the same ease and speed as man-power to till the fields.

There was another factor. European nations, including non-combatant countries, had suffered from food shortages and famines. The experience of facing starvation is not easily forgotten. Out of this grew a popular demand for less dependence on imported foodstuffs and a cry for self-sufficiency. This demand found political expression and it harmonized with military motives. This trend, which found such eloquent political expression in Italy, Germany and the United Kingdom, contributed to cutting off the old markets for American farm products. Other factors contributed heavily with the same end result. Among these were: the Treaty of Versailles and its failure to meet realistically the challenge of providing a more secure basis for European peace; the indecisiveness of efforts to deal with war debts and reparations; the political upheavals and the periods of uncertainty as new governments and systems of government emerged. We cannot disregard the fact that with the rise of these unsettling forces, the leaders found nationalism a convenient and potent rallying cry.

The emergence of policies of higher tariffs, quota restrictions, exchange regulations and other impediments to the exchange of goods tended to cement the mal-relationships. Today after the loss of a substantial portion of its old market, American agriculture faces a set of relatively rigid conditions of an unfavorable character in exploring the possibilities of restoring this outlet.

The loss of these markets meant that the product of forty to fifty million acres of farm land devoted to crops no longer had a destination beyond the sea. Split among American farmers, this area meant that portions of farms devoted to producing for a share in the export market no longer had this function to perform.

Internal Movements—Legislative Objectives

Internally, American agriculture found itself with excessive plant capacity, with a farm indebtedness based to a large extent on war and post-war land and income appraisals, and with an intensive competitive struggle for the remaining markets. The situation was of a most serious character for one-fourth of the nation's population from 1925 onward. With the panic of 1929, it grew increasingly worse.

Out and beyond this situation centering about the loss of export markets are a number of other factors frequently overlooked. One of these is the historical fact that while farmers continued as "rugged individualists" to compete fiercely with one another, they were moving in the direction of a common appreciation of their dilemma and, broadly speaking, groping towards group action. The rise of farm organizations was the most marked from 1920 on. Prior to this time they had emerged at times with political programs, then returned to more local and social concerns. I am not overlooking the significant role of the Grange in national legislation affecting transportation, conservation, monopoly and other fields. But the power of farm organizations at about the

turn of the century, if it existed, was accepting few opportunities for exercise.

In the rise of these organizations after 1920 there continued to be strong rivalry. But all of them had in common a sharp turn to national political affairs. They were responsive to the distress of their members, and the demands of farmers were clearly in the direction of obtaining some help, in some way, for their unhappy economic fate.

In the past 14 years the major objective in farm organization building has been the field of national political affairs. To ascribe this movement to the willfulness or inspiration of individual leaders instead of to a call from the great mass of farmers is to ignore the striking similarities in resolutions adopted at state, regional and national meetings. Proposals were many and varied, but through them all rang a note which was something like this: "We farmers believe we are not getting a square deal and we want action by the national government which will give us relief and equality with other groups."

It is significant that during these years the farmers, through their organizations, and the organizations through their leaders, grew more and more of a mind and that their indignation, unrest, and desire for governmental action moved from a state of groping in many directions towards more definite, clearly expressed and better rationalized proposals. Finally, in 1933, representatives of major farm organizations and farm editors, who were accepted spokesmen for countless unorganized as well as organized farmers, reached a significant agreement at a meeting called by Henry A. Wallace soon after he became Secretary of Agriculture. They endorsed the principles of legislation that found expression in the Agricultural Adjustment Act, passed soon after at the special session of Congress called by President Roosevelt as one of the first acts of his administration.

If the Adjustment Act had been proposed 100 years before, it would have been incongruous with the nature of farms, farming and farmers at that time. It would have been little more in tune with the times a half-century ago, although by that time the Grange movement had given expression to a righteous demand of farmers for many desirable reforms. During the last 40 years, "farm legislation" had found itself given increased consideration by national and state legislatures.

Farmers' Cooperatives

National farm legislation from 1895 until 1915 largely took the form of provisions for extending production research. This reflected the current needs and desires of farmers for emphasis on increasing production. But soon there developed another farm legislative phase which grew out of the cooperative marketing movement, and particularly the "Sapiro movement." Aaron Sapiro, with a gift for eloquence and organization, advocated that farm cooperative groups take over the practices and methods of "big business." The movement led to the Capper-Volstead Act of 1922. This had the effect of exempting farm cooperative organizations from the restraints of the anti-trust laws. It was the crowning glory of that group which saw in cooperative marketing the answer to the problems of the farmer—a group whose political champion was Herbert Hoover, through the Federal Farm Board experiment.

There are many types of farm cooperatives. Farmer-owned and farmer-controlled cooperatives have often become a rich resource of many agricultural areas. Good management has been developed in numerous instances and the finest ideals of cooperation given expression.

There was a feeling on the part of many farmers and farm leaders that rapid expansion of cooperation would alleviate the distress of farmers presented by the problem of the 1920's. They believed that if liberal financing were available, the development of cooperatives could be speeded up and much if not all of the loss of income, by reason of lost markets, retrieved. This group saw in collective bargaining and marketing through cooperative organizations the opportunity of improving the incomes of farmers, principally through the reduction of distributing costs. Many who dreamed of this development thought of its blossoming as that time when farmers would unite and through group action limit the volume of products marketed. This development was to culminate in bringing about price increase and income improvement.

Memberships, except in limited areas, never reached sufficient size to provide the power to affect prices materially. Had the goal been reached and had the principle of limiting the flow of products to market been carried to its ultimate conclusion we might have heard more about "scarcity economics," especially with respect to agriculture five and ten years ago.

The Farm Board and the heir to some of its functions, the Farm Credit Administration, are responsible for a great deal of effective assistance to the cooperative movement. But it was too much to expect that cooperatives could be thrown together overnight prepared to assume the burden of the problem of farm distress. Cooperatives must rely upon education, experience, and the realization of a mutuality of interest by members, and each of these elements requires time for development.

The Farm Board provided an experiment in the development of cooperation, but it was not a fair experiment with respect to the possibilities of cooperation. A place for the development of cooperatives is secure in the future of American agriculture. Indeed, while the Farm Board may have given expression to one concept of cooperatives, its chief contribution was an experiment in price stabilization. This undertaking was doomed at the outset. The Board's stabilization loans, which made it possible to postpone the marketing of price-depressed staples, accomplished nothing in the way of securing the needed balance between demand and supplies of farm commodities. In fact, the loans had the effect of making the situation worse; for, with prices temporarily improved by stabilization, farmers were tempted to produce more and to pile up additions to the unsold surpluses of cotton and wheat.

The Board, particularly its chairman, the late Alex Legge, and the capable staff with which he was surrounded, understood the dangers of stabilization. There was a full realization of the inadequacy of the Agricultural Marketing Act of 1929 under which the Board functioned. Legge pointed repeatedly to the facts of excessive supply and curtailed markets. The Board suggested that cotton farmers plow up every third row, but farmers, having no means of knowing whether others would follow this suggestion, went on

producing. The supply mounted to record heights while prices went lower and lower and finally, in the case of cotton, to five and six cents a pound.

The depression had brought with it a reduction in purchasing power on the part of the consumers of farm products. But despite this, much evidence was piling up that cutting prices of farm products did not mean an increase in consumption proportional to the reduction in prices. Indeed, there came from this a widespread popular understanding that demand for farm products in this country is relatively inelastic.

"Farm Legislation"—the Modern Phase

The modern phase of "farm legislation" began in 1924 when the first of the several McNary-Haugen bills made its appearance in Congress. Farmers were by no means united in support of the first bill, but the attention it focused on the farm problem had a profound effect upon the thinking of farmers with respect to national farm legislation and the economic bases of their problem. The McNary-Haugen bills, despite their defeat, first in Congress and later by veto of President Coolidge, greatly extended the economic horizon of farmers. It took them over and beyond the borders of their farms, their states, and beyond the regions producing similar products and towards a fuller realization of what changes in the international situation meant to them.

It was clear that the Agricultural Marketing Act in 1929 did not reflect the expressed desires of farmers generally. They were willing to see it tried, but there was a disposition to regard it as a red herring drawn across the trail of their demands. It fell far short of the goal great numbers had set during consideration of the McNary-Haugen bills with their provision for equalization fees. Meanwhile, the export debenture proposal had come forward to win wide popular and congressional support. It addressed itself to a fundamental difficulty—the loss of foreign markets. But the Agricultural Marketing Act was addressed, at least in the popular concept, to marketing within the nation. The proffer of higher tariffs on farm products, which reached a climax in the passage of the Hawley-Smoot Tariff Act, had some popular appeal to certain groups of farmers, but it did not produce an echoing chorus of praise from those engaged principally in the production of exportable commodities. By and large, the thinking farmers saw only damage to them in its provisions for greatly increased industrial tariffs, with the hopes of reviving trade with Europe further removed.

The Agricultural Adjustment Act

Meantime the voluntary domestic allotment plan began to win a following among farmers, as well as among business men who believed their prosperity depended upon better economic conditions among farmers; and this plan received wider acceptability among agricultural economists than any plan previously advanced.

This plan called for voluntary, cooperative action by farmers, with the government providing the means of making the cooperation effective. It proposed in one of its forms that tariff protection, already extended to many industries, be provided for producers of export farm commodities to place farmers on a basis of equality with industry. It proposed that taxes be collected at the first point of processing on wheat and cotton at a rate equal to a tariff. The tariff on wheat was 42 cents a bushel after the Hawley-Smoot Act

went into effect. A tariff of 5 cents a pound was to be provided for cotton.

The proceeds of these taxes were to be distributed among farmers who signed contracts agreeing to reduce the production of these commodities, in an amount to be determined by a referendum vote of producers. Those cooperating were to be paid benefit payments to the amount of the tariff, in addition to the market price on their share of the product going into domestic consumption.

Another variation of the plan, employing the same principle, and which found expression in the Agricultural Adjustment Act and programs undertaken by it, provided that the amount of the tax should be the difference between the average farm price and the price necessary to give the commodity a purchasing power equal to that during the years 1909 to 1914—a period of relatively satisfactory farm prices and income. With the proceeds of the tax, the farmer would be paid the difference between what he received at the market and the so-called "pre-war parity" price on the portion of his crop required for domestic use. In turn, he was to curtail his plantings. The amount of the reduction in his planted acreage was to be determined after careful surveys of the crop necessary to meet domestic requirements and prospective exports, given average producing conditions. This meant that acres formerly given to producing for an export demand which no longer existed were to lie idle or turned to production of non-export products from year to year while the emergency, growing out of surplus production, existed. It was intended that the program be undertaken gradually, with a view to bringing about a better balance between supplies and effective demand within two or three years. "Adequate production without waste" expresses the concept of its inventors.

The allotment plan called for exercise, by the government, of its centralizing powers to assure efficient administration. The government also was turned to for the reason that, with its responsibility to all citizens, it could be depended upon to assume the rôle of "referee" in the event that there might be a tendency to carry curtailment to an excessive point in the cause of high prices.

The beginning of the Roosevelt Administration found agriculture in a most critical condition. It was ready for another step in the evolution of farm policies. The Farm Board experiment had failed to meet the problem presented by the loss of foreign trade. Just before, in the administration of Secretary Hyde of the Department of Agriculture, provision had been made, in administering the seed loan program, that only farmers signing contracts agreeing to reduce their plantings of price-depressed crops were eligible for loans.

Even though President Hoover had been unwilling to look with favor upon anything other than experiments in collective action through marketing organizations, the problem of the farmer had been recognized by men with agricultural responsibilities in his Administration. Indeed, I believe that irrespective of the party which triumphed in 1932, activity of the sort undertaken by the Agricultural Adjustment Administration would have been taken ultimately. The new President was quick to recognize the necessity for emergency action. He had approved of the voluntary domestic allotment plan. With grave responsibilities of leadership affecting every segment

of the nation, he approved a realistic attack on the farm problem. He had a comprehensive and sympathetic understanding of the problem. Moreover, he was convinced that through increasing agricultural income, he would be providing a keystone for his recovery program. The passage of the Agricultural Adjustment Act came less than two months after his inauguration.

The Part Played by the Agricultural Economists

There are two other threads which run through the evolutionary pattern of agriculture up to 1933. One of these, the development of a body of competent agricultural economists, is of particular significance for the future.

Prior to the War, the chief emphasis among agricultural teachers and technicians had been on production, especially scientific shortcuts to reduced production costs. But economists also had been giving more and more attention to agriculture and, with the rise of the "farm problem" of the 1920's, these had turned to research, fact finding and objective treatment of the whole subject. The land grant colleges found an increasing demand for courses in agricultural economics. Their students, coming mostly from farms, had a valuable background of experience and understanding. They found that, unlike opportunities among economists devoting their time to industry, the possibilities of helping farmers increase profits had limitations by reason of the large number of small units in agriculture and the common qualities of the problems facing all farmers. They tended to see the national aspects of agriculture and to concentrate on national treatment of the problems facing all farmers. They had to think in terms of groups of farms, of regions, and of interrelationships between regions. These agricultural economists have focused the attention of farmers and agricultural leaders on new facts in the last 15 years, a development which, while not lending itself to tangible measurement, can be said to have been of great importance.

The other factor grew out of the first important effort of the economists to make the products of one field of research and thinking of definite value to farmers. Starting in 1922, under the direction of Secretary Henry C. Wallace, father of the present Secretary, and H. C. Taylor, chief of the newly created Bureau of Agricultural Economics of the Department of Agriculture, the "Outlook Service" was developed.

On the basis of all available facts of supplies and prospective demand, and in the light of known or expected trends, statements dealing with the outlook for the production and marketing of commodities were prepared and distributed. Each commodity was treated first from a national and international standpoint. Then the statements and forecasts were reduced to a regional and state basis. Members of the Extension Service staffs brought the "Outlook" directly to farmers at thousands of meetings throughout the country. It was assumed that farmers, thus equipped with the best available economic information, would plan their production with an awareness of supply-and-demand facts, which before they had not had and about which they could only guess. It contributed to a recognition of the desirability of conscious, planned production.

If I should rank the accomplishments of the adjustment program during the past two years, I believe now that the participation of more than 3,000,000

farmers in this activity would be placed near the top. This far-flung participation proves that farmers have found a desirable medium of expression in the adjustment programs and that they have the ability to cooperate.

It is difficult to isolate the accomplishments of adjustment in bringing better balance between supplies and effective demand, in improving farm prices and in contributing to national recovery. Monetary policies, the drought of 1934, and other factors besides the adjustment program have been at work. But with excessive supplies reduced, value has been restored to the products of farmers. Adjustment has been a major factor. This can be shown by reference to the products and the sections where the greatest recovery in farm income has taken place. The products feeling the sharpest cuts in value were the world-market products, such as wheat, cotton, hogs, and tobacco, which lost from 62% to 70% of their pre-depression value. Domestic-market products, such as dairy and poultry products and vegetables, lost from 45% to 50%.

From 1932 to 1934, farm income as a whole increased by 41%, regaining one-third of the income lost during the depression. In the cotton states, however, the increase ranged mostly from 40% upwards; in the wheat states from 50% to 70%, and in the corn belt from 30% to 60%. In the northeastern states, which had suffered the least previous decline, the subsequent recovery was the least, varying from 10% to 25%. Throughout the country, farm incomes have recovered the most where adjustment programs have been in operation.

The increased farm income has been reflected in marked increases in sales of industrial products to rural regions and has provided new employment for many urban workers. Farm purchases, both of new and second-hand cars, have been particularly important in reviving the automobile industry. The increased income to farmers has not represented merely a transfer from the incomes of city consumers, but an increase in employment and income in city and country alike.

Future Developments—Control

What are the directions adjustment is likely to take in the future? In this consideration we are not concerned with changes or influences of a purely transitory character. We can, however, preface any prophecy with the observation that the next phases of adjustment will, like the first, represent an effort to respond to a definite need of farmers. Adjustment will not move faster than farmers want it to move.

We should bear in mind that even the most transitory fact might be dramatic. For instance, the drought of 1934, the most severe in our history, had the effect of hastening the balancing of supplies with requirements at a far more rapid rate than had been expected or was necessary. Weather factors, even the extremes of drought, tend to "average out," and production when reckoned in terms of five or ten years deserves more consideration than the output or price of a single year. Yet the dramatic quality of the 1934 drought has given impetus to a movement for establishing what Secretary Wallace calls the "ever-normal granary." This would involve the storage of excess supplies in years of plenty to provide a reserve in years of poor crops. Loans could be made on stored commodities, if the loan contract provided for production control when

necessary. Unless such control was provided, loans of this character would be unsound extension of credit, with a destiny similar to the Farm Board's stabilization loans.

Words move from a general to a specific meaning. Practice improves performance. Trite as this may seem, this expresses the way in which adjustment, as farmers gain experience with it, will tend to drop its crudities and through refinement take on qualities fitting new needs. The evolution of adjustment will also represent responses to needs which may now exist but which are not realized generally. The evolution of adjustment will necessarily involve changes in the Act from time to time, changes in the attitude of farmers as their body of experience and knowledge grows, and also a better public understanding of agriculture and its relationship to other groups.

The rate of development or the specific direction of adjustment programs cannot be forecast. Programs to date have been undertaken on a commodity basis, uniform for the producers of the commodity, except in the case of tobacco where types vary widely with respect to both price and supply. The reductions in plantings have been on a horizontal basis. For instance, in the case of wheat, adjustments of plantings have been the same, irrespective of the type grown or the type of farming area or the relationship of the crop to other crops grown on the farm. The farmer, in selecting his "export acres" for temporary retirement from production, has been expected to select acres of "average" productivity. This was necessary in order to maintain a high degree of simplicity. Programs must meet the test of practicability and workability. Temporarily, adjustment on this basis has not conflicted with good farm management principles. From a long-time standpoint it will be desirable to take out of production, when that is necessary, the poorest acres instead of "average" acres.

It may be desirable, if and when a need is felt by farmers, to recognize that there is not uniformity between the supplies and demand for all classes of wheat. Farmers may also find it desirable to move away from horizontal adjustment and towards a recognition of the fact that wheat may serve an important function in rotating crops in general farming areas, while fitting in differently with the pattern of farming in areas where it is grown without companion crops.

Developments of this sort, of which there are many under study by farmers and research workers, will come as a gradual process. They should not come otherwise. It may be possible to deal with the whole subject of balance in livestock supplies by voluntary control programs for feed crops. But the complex relationships must be appreciated by farmers before this can be expected.

There exist, in addition to continuous competition between regions in producing certain commodities, a whole chain of complementary, supplementary and competing relationships between crop and livestock enterprises in a particular type of farming area and on individual farms. While the nation roughly includes 13 farming regions, it has a much larger number of sub-regions or type-of-farming areas, 800 or even more, depending on the classification used.

Every farmer has certain resources of land, fixed and working capital, labor force and other assets. The various commodities which he produces or may produce compete for the use of these

resources. His major problem, as a farm manager, is to decide the way in which he can combine the various crop and livestock enterprises into a system of farming which will result in the maximum utilization of his resources and yield him the largest net return.

The way in which farmers in different regions and even the same region combine their resources causes the systems of farming to vary widely. It is desirable that long-time adjustment take into account these regional, area and individual farm differences in order to be as economic and equitable as possible. If cognizance is to be taken of them, as is likely to come with the evolution of adjustment, we shall have to give more attention to regional and area differences in types of farming and combinations of enterprises on individual farms.

Closely associated with the problem of adjustment just referred to is the development of a technique which will be more scientific and equitable than is the method of flat percentage reductions—the base period method of allotment used in the emergency programs. The use of the historic base method in determining allotments tends to make of past production a sort of vested property right. It tends to perpetuate whatever maladjustments existed in the past between enterprises in the different regions or on different farms, and to prevent desirable adjustments made necessary by changing economic, physical, or climatic conditions. Its use alone tends to freeze production, if carried on over a long period of time, by both areas and individual farms on the basis of the past usage of land, which may not be warranted under present or prospective demand conditions. Although past production in each region or area should be used as a guide in making adjustments, it should not be the exclusive criterion.

Numerous plans for meeting this challenge have been studied. A program of economic research has been undertaken to provide an underpinning of fact for the evolution of this and other phases of adjustment. Knowledge of the complex interrelationships is now limited and of undetermined dependability. More research will be needed. In fact, a continuous program of economic research is essential if agriculture is to progress in the future in a world of closer economic relationships.

Conservation of our basic heritage, the soil, is also a major concern which is likely to grow in coming years. The need for erosion prevention exists widely. There are many inexpensive means of arresting erosion which can be carried on in complete harmony with adjustment. For instance, it will not be difficult to devise a means of encouraging use of slopes of certain gradients as pasture or meadow, which if tilled lead to heavy losses of top soil. This will be desirable from the standpoint of the farmer, the locality, and the nation.

Conclusion

Adjustment is not an omnibus, but there are a great many improvements in farm practice which if brought to the attention of the farmers in association with adjustment programs will tend to spur their adoption. Already it has greatly encouraged farmers to keep account books and records of production.

Meanwhile very real problems are growing out of the bearing of farm credit and debt structure on production control; the problems of the security of tenants and laborers, and the closely associated problem of what the excess population of young people can do who

are damming up on farms by reason of the limitation of employment opportunities in cities.

A recitation of the chain of dilemmas facing agriculture in both the immediate and the distant future would throw only limited illumination on the tasks facing farmers. More important now is the method likely to be employed.

Secretary Wallace has expressed repeatedly his concept of "economic democracy." Reduced to its simplest terms this means that adjustments would be made in the case of agriculture only as rapidly as farmers desired them, with every emphasis on voluntary, cooperative participation. It involves a greatly expanded program of educational opportunities for farmers, particularly as adults; opportunities for getting at facts, for discussing them, and for acting with due regard for both immediate and long-time effects.

The county production control associations are organizations of producers of basic commodities who elect their own officers and administer many of the control programs. These have been successful from an administrative viewpoint as well as a demonstration of the ability of farmers to cooperate in a democratic way. The place of the agricultural colleges, the extension workers and farm organizations, as advisers, consultants and administrators, has been far more than "window-dressing" in the adjustment programs.

The referendum principle is being regularly employed among producers. This is in keeping with the intent of the Administration to proceed only as fast as, and no faster than, farmers desire, and at all times with due regard for the obligation of the Department of Agriculture to the consuming public. Chester C. Davis, administrator, has said of adjustment that it is "the farmers' show."

It seems to me that adjustment has shown the way not only to the possibilities of cooperation among farmers with the government but to the need for comprehensive agricultural planning. Perhaps it is too far distant to deserve mention now, but adjustment has indicated the possibilities of a more conscious interlocking of relationships not only among farmers, but also between agriculture and other groups, who have, after all, a unity of interest which should rise above group considerations. To devise machinery to couple such development with the evolution of farm policy, and in keeping with democratic principles, is a task for the social inventor of the future.

SOME ASPECTS OF PUBLIC UTILITY RATE MAKING

By C. O. RUGGLES

THERE is much public interest at the present time in the rates, management, and regulation of public utilities. There is a widespread demand for rate reductions, and more recently there has been agitation for some plan of automatic adjustment of rates. This has come about in part because the public has grown suspicious of the efficiency and the integrity of highly centralized holding company management and because they believe that regulation has been ineffective. Some aspects of rate making are considered in this discussion. Management and regulation are inseparably bound up with rate making, but will be given consideration in a later article.

Recent Interest in Automatic Rate Adjustments

Within recent months we have heard much about the so-called Washington Plan of making rates for electricity. This plan attempts to provide for an automatic reduction or increase of rates in accordance with certain decreases or increases in the rate of return allowed to the utility on some predetermined valuation or rate base.

There appears to be a popular impression, if such a plan can be universally adopted, that we shall have an effective automatic control of rates and that our regulatory troubles will largely be at an end. This is a remarkable shift in our psychology from our early childlike beliefs that rates could be definitely fixed in a franchise for 50 years or at least that statutory control, such as the New York 80-cent gas law, was a satisfactory method of controlling public utility rates. This psychological shift and yearning for an automatic device to control rates reminds one of the faith of an individual who, after suffering for some time with a serious malady, finally relies upon a patented medicine which is guaranteed to give a permanent cure within a very short time. It will be well for us to realize once and for all that there is no royal road to public utility rate making.

English Experience.—England more than three-quarters of a century ago tried the so-called Washington Plan in making gas rates. The legislative germ of the "standard sliding scale," as the system adopted in England in 1875 and 1876 has come to be called, appears to be found in the Sheffield Gas Act of 1855. This act provided that dividends might be increased to a certain maximum rate if accompanied by specified reductions in the price of gas.[1] Striking changes in prices and other important changes in economic conditions have made it necessary for England to "regulate" the plan itself.[2]

[1] Matthews, Nathan, *The Public Regulation of Gas Companies in Great Britain and Ireland, with special reference to the "Sliding Scale."* Second Edition. Boston: Rockwell & Churchill Press, 1915, Part I, Ch. XI.

[2] I am indebted to Mr. Philip Chantler for the opportunity of having access to an unpublished thesis for an A.M. degree at the University of Manchester (1934) on "The Economic Characteristics of Public Utilities with Special Reference to the Gas Industry."

The plan was found to be fairly satisfactory during periods of falling prices because decreases in rates were linked with increases in rate of return to the gas companies. The scheme worked beautifully so long as the companies' costs were decreasing. But during periods of advancing prices the companies could advance rates only by reducing their rate of return, a plan that obviously had very serious limits and finally called for Parliamentary action. It is clear that the English believed that if they could have an automatic adjustment of gas rates they would be able to eliminate vexing regulatory problems. Thus does history repeat itself in the recent interest in the United States in some plan of automatic control of utility rates.

Boston Experience.—The Boston Consolidated Gas Company copied the English sliding scale plan, and it will be of interest to give some consideration to the features of the Massachusetts law under which this plan was tried and to state the outcome of that experience.

The Massachusetts legislature in 1906 passed a law which provided for a *standard price* of gas of 90 cents per 1,000 cu. ft. and a standard dividend to stockholders of 7%.[3] The automatic and interdependent adjustment of price to consumers and rate of dividends to stockholders provided that if during any year the *maximum net selling price* had been less than the *standard price* the company might, during the following year, declare and pay dividends exceeding the standard dividend in the ratio of one-fifth of 1% for every cent of reduction of the *maximum net selling price* below the *standard price.*

[3] Acts and Resolves of Massachusetts, 1906. Chap. 422.

Under this act the Boston Consolidated Gas Company reduced its price of gas in 1906 from 90 to 85 cents, and in 1907 to 80 cents. It continued this charge until 1918 when it was increased to the maximum allowed under the act, *i.e.*, the *standard price* of 90 cents. The dividends paid by the company during the same period were as follows: 7% for the year ending June 30, 1907; 8% for the year 1908; and 9% from 1909 to 1913 inclusive. In 1914, the company paid but 8%, increasing to 8½% for 1915 and 1916. In 1917 and 1918, only 7% was paid.

The Massachusetts law anticipated that economic conditions might make it necessary to change the *standard price.* Accordingly, the law provided that at any time after the expiration of 10 years from the 30th day of June, 1906, the Board of Gas and Electric Light Commissioners should have authority to lower or raise the *standard price* to such extent as "may justly be required by reason of greater or less burdens which may be imposed upon the company by reason of improved methods of manufacture, by reason of changes in the prices of materials and labor, or by reason of changes in other conditions affecting the general cost of manufacture or distribution."[4] No provision was made in the law for any change in the rate of dividend, which indicates that the legislature considered 7% as adequate. It may also be assumed that the legislature believed that it was fixing the *standard price* high enough to enable the company to earn the standard dividend, and that it was safe to forecast for 10 years the economic conditions upon which the ratio of the *standard price* to the standard dividend was determined.

[4] Sec. 9, *op. cit.*

The Great War affected the cost of making gas to such an extent that the company appealed to the Massachusetts Board of Gas & Electric Light Commissioners in 1918 for an increase in the *standard price*. That commission allowed the standard price to be advanced to $1.[5] In January, 1921, the commission again raised the standard rate, setting it at $1.40 per 1,000 cu. ft.[6]

The intuition of the public in seeking some sort of an automatic adjustment of public utility rates is sound. Moreover, this demand has arisen because our present regulation of public utilities has not been satisfactory either in the interest of the public or of the operating utilities themselves. It is, therefore, worth trying to secure a regulatory plan which will give adequate consideration to the efficiency and integrity of public utility management and which will also recognize the degree to which regulation of both rates and rate of return should take cognizance of the significance of striking changes in economic conditions.

Essential Features of an Automatic Plan

It is clear that any such automatic adjustment of rates as is contemplated by the English sliding scale or the so-called Washington rate plan involves fixing: (1) a standard rate; (2) a standard dividend; and (3) the ratio between these two. It ought to be equally clear that this is a large order and does not eliminate our regulatory troubles. If a mistake is made in determining any one of the foregoing factors or by not recognizing the need for changes in the whole set-up as the result of important economic changes, the plan will fail to function. It would be as logical to attempt to anchor three ocean liners by tying them together in midocean as to try to secure effective regulation of public utility rates merely by fixing a standard price, a standard return, and a ratio between the two, on the theory that thereafter the real difficulties which we have encountered in rate control would be eliminated.

The Rôle of a Rate Base.—In setting a standard rate, the rate base at once comes up for consideration. It is not generally appreciated that in working out the Washington Plan the rate base of the Potomac Electric Power Company was agreed upon only after a long drawn-out 10-year struggle between that company and the District of Columbia Public Utilities Commission, and that changes in economic conditions have necessitated certain readjustments of the plan within the brief period since its adoption in 1925.

Both the public and the public utilities have so far taken an opportunistic position with regard to a rate base. In the famous case of *Smyth* v. *Ames*,[7] William Jennings Bryan as counsel for the public insisted in 1898 that the reproduction cost was the proper base upon which to calculate railroad rates. But the ink was scarcely dry on the Bryan brief before an advance in prices was under way which later caused the public utility lawyers to use the Great Commoner's arguments for the benefit of the utilities. When we again experience a long period of low and falling prices, history will repeat itself and the advocates of prudent investment will be the utilities themselves, as was the case in the *Smyth* v. *Ames* controversy nearly 40 years ago.

[5] PUR 1919A, 699, 703.
[6] PUR 1921B, 55, 62.
[7] 169 U. S. 466; 18 Sup.Ct.418 (1898).

It is clearly beyond the limits of this discussion to enter into all of the merits of the different methods of valuation of public utilities for rate making purposes. But no discussion of the flexibility of rates can wholly ignore the question of the rate base. This much seems clear, that even the advocates of prudent investment, who are seeking a so-called stable rate base, recognize the need for varying the rate of return with changes in economic conditions. Both Mr. Justice Brandeis in his dissent in the famous O'Fallon case,[8] and Commissioner Eastman in his dissent in the next important case on valuation,[9] decided by the Interstate Commerce Commission after the O'Fallon decision, recognized this need. Careful analysis of the economic issues involved would appear to indicate that, regardless of the particular rate base selected, some provision must be made for *flexibility* either in that base or in the rate of return. In his dissenting opinion in the O'Fallon case, Mr. Justice Brandeis recognized the fact that there are many railroad facilities today that have lost their economic value. To include such facilities in a rate base would simply mean further loss of traffic to motor carriers. After all, the railroads were unable to use the O'Fallon decision, for if they had tried to fool themselves that they could really make increases in rates in order to try to secure a fair return on the 1929 reproduction value of the railroads, they would have invited further depletion of their revenues through competing agencies of transport.

The Rate Base and Cost of Service in Rate Making.—It ought to be appreciated that about the only effective use that can be made of a valuation (which is a vital factor in automatic or sliding scale plans) is to determine whether revenue *already obtained* represents a fair return on that value. Valuation is of little use in attempting to work out a forward—looking marketing program. Starting with a valuation and trying to make rates conform to it is putting the cart before the horse. Such procedure assumes that cost of service is *controlling* in rate making, whereas its effect is only an indirect one, and cost is only one factor in making rates. Neither the railroads nor the street railways can today charge rates that will yield a fair return on their actual investment, even assuming that every drop of water has been squeezed out of the rate base. This simple fact was apparently not realized by the investment bankers and the life insurance presidents when they appeared before the Interstate Commerce Commission during the present depression to plead for increases in freight rates on the theory that such action would increase the revenue of the carriers. Even the very slight increase granted by the Interstate Commerce Commission proved in some instances to be a boomerang, for, very soon after the order was made, the railroads were back before the commission praying for a decrease in certain rates even below what they had been before the reduction and asking that the customary 30 days' notice be waived because the trucks were moving much highly seasonal traffic that would be entirely lost to the railroads unless they could make an immediate reduction in their rates.

[8] *St. Louis & O'Fallon Railway Co.* v. *United States of America et al.*, 279 U. S. 461; 49 Sup.Ct.384 (1929).

[9] Interstate Commerce Commission, Finance Docket 3898, *Excess Income of Richmond, Fredericksburg and Potomac Railroad Company*, 170 I.C.C. 451–555 (1931).

The foregoing argument does not eliminate cost as an important factor in rate making over long periods of time. It would be absurd to argue that investors will continue to put capital into any business which does not in the long run promise some return on that investment. But even on the score of giving recognition to cost in rate making, *past costs* are not the determining factor. However, some of the public utilities have been quite short-sighted in making much use of past costs in the formulation of their marketing policies. For precisely that reason, some of them have not had the development of their markets that they might have had. Actually, *future* costs determine the extent to which a public utility's market can be developed either extensively or intensively. This, in turn, means that pioneering and experimentation must be the essence of a forward—looking and aggressive marketing policy. This calls for funds, and any operating company which does not make adequate provision for such funds to be used in the development of its market will not be able to reach low costs (which lie in the future) through larger scale operations. The same statement, of course, applies where a holding company interested primarily in finance has siphoned off revenue from an operating company that should have had ample funds to be used in long-range market development. Further reference will be made in a later article to the significance of an aggressive marketing policy in discussing some phases of management.

Changing Economic Conditions and Stability of Utility Industries

If we consider the rate base in light of the advance in the arts, it may be said that *prudent* investment can never be *prudent* if by that we mean that rates can always be made which will give a fair return on the actual investment which has been made in a public utility plant. During the year 1934 the railroads were authorized to abandon 2,500 miles of line, the greatest in their history, and there are approximately 15,000 miles less of railway in this country than there were 15 years ago.[10] Complete abandonment of street railways for motorized systems of local transportation is occurring to an increasing extent in a number of cities of all sizes every year.

We are not likely to accomplish very much in public utility rate making until we recognize that these public utility industries cannot be operated in a vacuum and that they are vitally affected by the developments of the dynamic world which they serve. Sometimes these developments occur within the utility itself; often there are changes independent of and entirely beyond the control either of utility managements or of the regulatory bodies. The decision of the United

[10]

Year Ended 10/31	Number of Applications Filed	Miles Sought to Be Abandoned	Number of Certificates Issued Permitting Abandonment	Miles Permitted to Be Abandoned
1920	9	235.47		
1921	40	1,035.32	31	701.93
1922	47	808.46	30	526.53
1923	36	964.94	19	523.41
1924	52	949.82	30	453.83
1925	57	883.21	46	651.97
1926	46	937.19	49	592.56
1927	56	792.26	52	830.61
1928	53	752.21	61	587.05
1929	69	1,716.57*	48	539.53
1930	75	980.83	72	1,807.46*
1931	88	1,075.53	89	1,019.31
1932	114	2,281.42	90	1,418.27
1933	153	3,263.21	129	2,404.26
1934	125	2,013.48	154	2,514.22
Total..	1,020	18,689.92*	900	14,570.94*

Source: *Forty-Eighth Annual Report of the Interstate Commerce Commission, 1934*, p. 20.

* Includes 881.65 miles on which the Delaware & Hudson Co. was permitted to abandon operation and which was acquired and operated by the Delaware & Hudson Railroad Corporation, a new company.

States Supreme Court under which the United Railways & Electric Company of Baltimore attempted to collect a 10-cent fare has not kept that company out of the hands of a receiver. The *rate base* in that case was not even an issue; the rate base had been agreed upon by the street railway company and the Maryland commission. The issue was, what constituted a fair return. Speaking with regard to that matter, Mr. Justice Brandeis said:

> A net return of 6.26% upon the present value of the property of a street railway enjoying a monopoly in one of the oldest, largest and richest cities on the Atlantic Seaboard would seem to be compensatory . . . [11]

It would appear that stability either in public utility rates or in a rate base is simply not attainable, and we are really fooling ourselves in attempting to secure it. There is no real economic difference in trying to keep the *rate base stable* and *varying the rate of return*, or in following the opposite policy. It is the *product* of these two factors that is of vital concern, but it must be recognized that fundamental changes in economic conditions or advance in the arts may make it impossible to secure a fair return by using as a rate base either prudent investment or reproduction cost.

One reason the public now wants some sort of automatic adjustment of rates is because of its disgust with long drawn-out appraisals and interminable controversies over all sorts of elements entering into valuation. Even the man in the street can see the futility of rate cases that drag on for 10 years or even longer with a decision which, when it is finally rendered, cannot be tuned into the completely changed economic conditions without a maximum of static. No wonder the public has sought relief through recent so-called "rate negotiations" which in essence are curbstone or horseback opinions of what each side calculates should be done in making "emergency" rates. The *time element*, in other words, has come to be generally recognized as vital to any satisfactory plan of rate making and rate regulation. The impatience of the public with the long drawn-out "reproduction valuations" is well founded. And yet, the varying of the rate of return also presents difficulties. If a fair return over fat and lean years is to be sought, it may be necessary to allow a return in prosperous years that will seem to the public quite unfair, for they will not at that time have so vividly in mind the low earnings or even deficits of the lean years. If prudent investment could be varied with the swings of the price level by means of properly constructed index numbers, and the rate of return kept at a point considered fair for public service industries, the *time element* could be brought within fair limits, and with very careful supervision of utility accounts it would take away the incentive to concoct many unreal elements which are now presented for inclusion in a cost of reproduction rate base. This plan, if properly constructed index numbers for each type of utility were worked out, would probably be recognized by the courts even under the present law.

Automatic Rate Control and Complexity of Marketing Industrial Power

It is a real gain that the public now appreciates the importance of having flexible rather than fixed public utility rates. But in considering the extent to which light and power rates, for example, should change with economic

[11] 280 U. S. 234, 50 Sup.Ct.123,127 (1930).

conditions, it is necessary to keep in mind that not all parts of the market for electricity have the same economic characteristics, and hence that various parts require somewhat different treatment in rate making.

The market for electricity may be briefly divided into three broad divisions: the domestic, the commercial (retail), and what is now largely the industrial market (wholesale).[12] Attention will be confined in this paper almost entirely to the wholesale competitive market. Historically the domestic market was first, and indeed for some time was the only market for electricity. Gas had been in use for over 50 years before electric light companies came into existence; hence the early managers of the electric light companies concentrated their attention on competition with the gas companies in the sale of light. They had almost no appreciation of the importance of the market for power. "Committees on Power Sales" did not exist either in the organization of the individual companies or in the associations of the industry for some time, and under the rate making policy, then in vogue, they could not have sold power to this market.

[12] *The United States Census of Electrical Industries* for the year 1927 was the first to show detailed statistics by class of service. It made, on p. 35, the following classification: (1) farm service; (2) domestic service; (3) commercial service: (a) small light and power (retail), (b) large light and power (wholesale); (4) undistributed by class of service; (5) municipal street lighting; (6) railroads—motive power: (a) street and interurban railways, (b) electrified steam-railroad divisions; (7) other service.

In the next (1932) census and the latest available at this time, the item "undistributed by class of service" was eliminated, as that census "made a complete distribution by type of service although it was necessary in a few cases to accept estimates from the reporting company." "A considerable part of the 'undistributed' item as published in the 1927 volume was domestic service and 'small light and power.'" P. 14.

Some fundamental mistakes were made at the outset in making rates for electricity. Mention has already been made of the attempt to fix these rates for very long periods of time. But the important weakness in early electric rates that prevented the possible development of the wholesale market was the uniformity of rates for all customers. This appeared to be in harmony with the ideal of equal treatment as embodied in Jeffersonian democracy, but it was unsound public utility economics. The early electric light and power companies doubtless made this mistake in rate making because they copied the methods of making gas rates that were then in vogue, of so much per 1,000 cu. ft., regardless of the amount consumed or the conditions under which it was consumed. Obviously, since storage of electricity is not commercially feasible, this mistake was more serious for the light and power companies than it had been for the gas companies.

Along with the recent demand for some sort of automatic adjustment of rates, there is also agitation for greater simplicity in light and power rates. The assumption is that there is no justification for the great variety of rates under which electricity is now sold.

The wholesale power market presents important difficulties in the adjustment of rates to changed economic conditions and also with regard to the use of simplified and uniform rate schedules. Moreover, the development of this market has vitally affected the rate of return that may be realized by a power company through periods of business booms and depressions. Some facts, therefore, concerning the development of this market and its eco-

nomic characteristics should be given consideration.

Electricity was first made available to American industry through private power plants of the industries themselves. The data in Table I show that in 1899, 4.88% of the power used in industry was electrical power. By 1929 this had increased to 81.88%. It will be seen that in 1899, of the 4.88% which was electrical power, industry generated for itself 3.07% and purchased only 1.81%.[13] By 1929 the 81.88% of power in industry which was electrical power was divided as follows: only 28.83% was generated by industry, while 53.05% was purchased from public utilities.

TABLE I. POWER IN UNITED STATES—MANUFACTURING INDUSTRIES*

All Industries	Number of Establishments Reporting Power Equipment	Total Rated Capacity (H.P.)	Electric Motors Driven by Purchased Current		Electric Motors Driven by Current Generated in Establishments Reporting		% Total Installed Primary Power Rep. by H.P. of Electric Motors	% of H.P. Electric Motors Run by	
			Number	H.P.	Number	H.P.		Purchased Power	Current Generated in Establishments
1899	133,418	10,097,893	†	182,562	16,891	310,374	4.88	1.81	3.07
1904	134,181	13,487,707	†	441,589	73,119	1,150,886	11.80	3.27	8.53
1909	185,042	18,675,376	199,309	1,749,031	189,545	3,068,109	25.80	9.37	16.43
1914	205,590	22,547,574	452,102	3,917,655	320,260	4,929,967	39.24	17.38	21.86
1919	222,942	29,323,653	976,278	9,282,541	486,805	6,968,950	55.42	31.65	23.77
1923	173,415	33,092,222	1,425,492	13,364,298	616,387	8,821,403	67.04	40.38	26.66
1925	167,533	35,766,944	1,723,539	15,864,638	772,411	10,254,658	73.03	44.36	28.67
1927	174,118	38,825,681	2,151,675	19,132,310	790,810	11,219,979	78.18	48.28	28.90
1929	193,969	42,931,061	2,724,843	22,775,664	852,432	12,376,376	81.88	53.05	28.83

* Figures for the years 1899, 1904, 1909, 1914 taken from the *Abstract of Census of Manufactures*, 1914, p. 491; figures for the years 1919, 1923, 1925, 1927, 1929 taken from the *Census of Manufactures*.
† Figures not available.

The early light and power companies were too small to be of much service to large industrial customers. In most instances, the early public utility power plants were no larger than, if as large as, those of industrial concerns.[14] But after the light and power companies began to develop the market for power, the public utility plants not only far outstripped the industrial power plants in size, but through the use of alternating current and long distance transmission, they were also interconnected in such a manner that the power companies could furnish the industries with unlimited amounts of power at lower costs than could be realized in industrial power plants. Moreover, the public utility plants could give the industries a much better guarantee of continuous service than they could possibly provide for themselves through standby plants. Outside of the industrial concerns, therefore, which had substantial needs for steam and where they thus had power as a by-product, the industrial power plants could not ordinarily compete with the central station service on the basis either of cost or of dependability of service.

It will be seen from Table I that in 1919, for the first time, electrical power exceeded all other power used in American industry, being 55.42% at that time. Also more power was purchased from the public utilities at that

[13] This statement is not strictly accurate, for, as will be observed from Table I, the data are not for actual energy consumed but rather are for *horse power* of electric motors. The data for 1929 are the latest available at this time. It is regrettable that the Census of Manufactures for 1931 and 1933 excluded data on power equipment as an economy measure.

[14] Indeed, as late as 1925, the American Printing Company of Fall River, Massachusetts, for example, was selling power to the Fall River Electric Light Company.

time than was generated by the industries themselves. This shift had really taken place during the Great War when industries were classified as essential and non-essential. The latter group found it very difficult to secure the consent of the United States Fuel Administrator to secure coal. The light and power companies, on the other hand, were able to purchase fuel, and the Director-General of Railroads readily gave priority in the shipment of coal for all public utilities. This situation caused many industries to purchase power for the first time. Up until that time there had been a feeling of pride and independence on the part of many of the large industrial concerns that they had their own power plants. They had been compelled to look after themselves so long before there were any light and power companies that it was not easy for them to realize that they were probably no longer justified in generating their own power.

Rate Making for the Industrial Competitive Market

Rate making for the industrial competitive market presents some difficult problems. One important weakness of early light and power rate making which crept into rate making for the industrial market was the practice of including the entire charge made for service in the rate per kw.-hr. Fortunately, these utilities after a time saw the fallacy of that mode of pricing their service and began to use so-called two- and three-part rates, which were designed to cover the expenses incurred by the power company in providing facilities with which to serve customers, whether any electrical energy was actually consumed or not. However, in making these two- or three-part rates, the power companies were still confronted with a difficult problem in making a proper division of the total charge made to large wholesale consumers between fixed or demand charges and the rate for the energy itself. If the demand charges were made too high, the industrial customers might decide to generate their own power. If they were made too low, the power companies had a fair weather contract which yielded ample revenue only when the industrials were using large quantities of power, and such a rate contract might prove to be very serious over a long business depression. Obviously also, the demand charges had to be adjusted according to the time at which the industrials used their service. If the peak demands of these large consumers coincided with the system peak of the power company, the demand charges would need to be relatively high. If they occurred during the utility's off-peak periods, they could be made relatively low. These matters will receive further attention later in this article.

Rate making for large industrial customers was not a very serious problem when the utilities first began to serve this market, for, at that time, the domestic customers were responsible for the peaks on the central stations, and much power was sold in off-peak periods at very low energy rates and with little, if any, consideration as to what constituted proper fixed or demand charges. Later, for some power systems, the industrial customers themselves became responsible for the peaks of the utilities, the domestic customers really being off-peak consumers. It might seem that in such a case relatively high charges should have been made to the industrial consumers as compared with rates to

the domestic market. But the problem is not so simple as it seems. It would be distinctly against the interest of the domestic consumers to make such a high charge for industrial power that these large customers would install their own power plants. It is true that the early low rates given to power consumers were justified on the ground that they were off-peak low-cost rates. But this was not the complete explanation, for even in cases where industrial users later became responsible for the central station peak, it was not possible to raise rates for that power higher than the cost of substitute power of some sort which the industrial might decide to provide for itself. We have precisely the same problem in railroad rates for short or long hauls. Early railroad rates were relatively higher for short hauls than for long ones, and these rates were then justified on the ground that the terminal and handling charges were the same regardless of the distance that commodities were carried and that on the score of costs the rates for very short hauls must be relatively very high. Now the rates on the railroads for short hauls are relatively very low, and they are not and cannot be justified on the basis of cost. Because of keen motor competition for the short hauls, these rates have been set in precisely the same manner that wholesale power rates are made.

In light of the foregoing analysis, it would appear that the rate schedules of the TVA, which provide that any deficits which are incurred in serving the domestic customers are to be made up by surcharges on commercial and industrial customers, are unsound. Such a plan might not mean serious loss of commercial customers, but it is evident that industrial consumers will not pay more than it will cost them to generate their own power. Loss of such customers injures the domestic consumers themselves because, in the first place, it will prevent the power company from making full utilization of its plant, and second, it will curtail the size of a power company's operations, thus increasing the unit cost of power.

Significance of Business Cycle in Pricing Power

The swings of the business cycle have made the problem of demand charges in wholesale power rates a very vital matter. During business "booms" there are, of course, increasing numbers entering business, for with advancing prices, or with important technological improvements cutting costs, there is a strong incentive to take advantage of the economic conditions. It is during just such periods that power companies are called upon to provide enormous increases in service to the wholesale power customers. Since a public utility cannot refuse to provide service to all comers, its only hope is to price its services in such a manner that it will not be called upon to make unwarranted investment in plant, which may become idle as soon as business slackens and prices begin to fall, thus leaving the power company holding the investment bag.

One of the most important aspects of rate making for the wholesale competitive market is the need for flexibility of such rates to conform to changes in economic conditions. During the period of the Great War, power companies found themselves confronted with sharp advances in prices for fuel, for materials of all sorts, and ultimately also for wages. For example, in the case of Union Electric Light

and Power Company of St. Louis, the cost of coal increased from an average of $1.122 per ton in 1914 to an average of $2.472 in 1917. At the same time, the quality was reduced so that the cost per million B.t.u. increased from 5.23 cents to 12.08 cents. Wages increased almost 20% during the same period.[15] The cost of coal to the Milwaukee Electric Railway & Light Company for the year ended December 31, 1915, was $2.46 a ton for a quality of coal that contained 12,350 B.t.u. per pound; for the month of July, 1917, the cost per ton was $4.86 for a quality that contained but 10,922 B.t.u. In other words, this coal increased in price nearly 100% over the prices of 1915. The mine prices for coal purchased by the public utility were based on a contract which in turn provided that mine prices were to be based on mining and day wage scales and were to be increased or decreased in accordance with that scale.[16]

But it may be said that during a period of rising prices, the power company does not need to advance its rates to wholesale consumers, because the utility merely through the increased volume of business would reduce its unit costs and thus realize an increasing margin of profit as prices continued to advance. But the case is not quite so simple as it might appear. If the power company does not advance rates to its wholesale competitive market during a period of advancing prices, it is actually selling something for less than its fair market value. This is an injustice to its domestic consumers, and to the public utility itself. It is clear that if large industrial customers were generating their own power during such a period, instead of purchasing it from the power company, they could not possibly escape the effect of increasing prices of fuel and of electrical equipment of all sorts, and finally, of an advance in wages. Moreover, men always have a tendency to be lavish in the use of anything which they can secure for less than its fair market value. If the large customers of a power company are not called upon to pay an increased price for power during a period of rising prices, they will have a tendency to be somewhat careless in their use of power and thus the pricing policy of the power company would accentuate to some extent the upward swing of the business cycle. This would be true to a greater extent, of course, of those industries in which power was an item of much importance in the total cost of the product.

During the period from the early 1920's to the panic of 1929 we did not have increasing prices of commodities, nor did we have increasing prices of items involved in power cost construction.[17] Whether that was because

[15] PUR 1918E, 490.

[16] PUR 1918A, 798.

[17] Richey, A. S., *Electric Light and Power Construction Cost Index*. Elements that make up the Richey cost index may be classified in three groups: (1) material prices, including raw, semi-processed and manufactured goods; (2) labor rates; (3) a factor to adjust the processed trend of material and labor to that of highly processed machinery, such as electrical and mechanical equipment, in so far as it enters into this class of construction. Actual prices or labor trends of such equipment, especially of large units, are not available except with considerable time lag, hence the necessity of the adjusting factor.

1932 Revision (1913 = 100)

1914	94	1921	182	1927	175
1915	100	1922	163	1928	178
1916	127	1923	178	1929	181
1917	164	1924	180	1930	180
1918	175	1925	177	1931	165
1919	182	1926	176	1932	151
1920	211				

Source: *Electrical World*, January 21, 1933, p. 105.

the expansion in business to some extent offset the inflationary forces, or because technological improvements cut costs, or for other reasons, is not within the province of this article to discuss. The important fact in this discussion is that even if an automatic sliding scale based upon price movements had been available in the years preceding the panic of 1929, it would not have been of any real service in the setting of rates to industrial customers. Yet the power companies were making an expansion of plant during that period which made the proper type of power rate schedule of vital importance. The facts with regard to plant expansion and net income from 1917 to 1932, as shown by the United States Census of Electrical Industries, are given in Table II.

TABLE II. PLANT EXPANSION AND NET INCOME OF PUBLIC UTILITIES, 1917–1932

Year	Plant and Equipment, Commercial Companies	% of Increase from Previous Period	Net Income	% of Increase from Previous Period
1932	$12,124,807,425*	36.5	$575,671,404‡	6.5
1927	8,880,291,499†	110.0	505,787,025‡	160.5
1922	4,229,356,023	44.2	212,494,792	112.2
1917	2,933,016,941	.....	100,325,933	

Source: *U. S. Census of Electrical Industries*, 1932, Central Electric Light and Power Stations, pp. 5–6.

* Reported as "Fixed Capital" for electric light and power establishments for 1932.

† Includes $902,057,279 value of plant and equipment owned by companies engaged in the operation of electric light and power plants and of other public utilities, not distributed among the several utilities.

‡ In order to have data for 1932 and 1927 comparable with earlier years the following deductions should be made: For 1932, excess of rents paid over rents received, $10,861,896, and retirement appropriations from surplus, $27,801,362; for 1927, the amount of $54,801,550 comprising excess of rents paid over rents received, amortization of franchises, and appropriations from surplus for depreciation or retirement reserves.

The swings of the business cycle then make the proper division, between the demand charges and the energy charges in industrial power rates, a crucial matter regardless of the fact that there may have been but little if any changes in the price level. Moreover, since it is not possible to work out a definite ratio between the amount of demand charges in a power rate schedule and the plant expansion which a given company may be called upon to make in order to serve the industrial market, some of the important economic factors affecting such a ratio may be considered. To mention only one or two, it is clear that the extent to which the industries to be served by the expansion of the utility's plant are specialized or diversified would obviously be important. In a "one-industry" community, the demand rates ought to be high enough to take that fact into consideration. If the industries served by a power company were of such a type that they would be seriously affected by a business depression, the demand charge for such industries would need to be higher[18] than for industries that would continue to use substantial amounts of energy in periods of depression as well as in periods of boom. For example, a manufacturer of iron and steel castings purchased from a power company in the year 1928, 20,284,000 kw.-hrs., and in 1932 but 4,357,550 kw.-hrs., or a decrease of 78.52% in its consumption of electrical energy within five years. On the other hand, a manufacturer of cereals who purchased 3,194,644 kw.-hrs. in 1928 purchased 3,282,000 in 1932, an increase of 2.73%. Taking all the wholesale customers of another large power company in the food products group, it is seen that the total of purchased power by that group was 150,943,373 kw.-hrs. in 1928 and 148,908,660 in 1933, or a decrease of but 1.35%. The customers of the same company in the steel products group purchased 290,532,425 kw.-hrs.

[18] Provided, of course, that competition of central station power with power generated by the industry makes such a course of action possible.

in 1928 and but 170,307,070 in 1933, or a decrease of 41.38%.

If all the customers classified as wholesale by the United States Census of Electrical Industries, which of course includes many different types of customers, are considered, they were purchasing about 3% less power from the utilities in 1932 than they had been using even five years earlier. During the same period the amount of electric energy taken as farm service increased 80%, and domestic consumers increased their consumption by 66%.

Importance of the Demand Charge

It has already been said that the demand charge should not only be adjusted according to plant extension made necessary by business booms and expansion of the wholesale part of the market, but also according to the time of day or year during which these customers demand this power. Obviously, if the power company made no increase in demand charges and if prices are advancing during periods of business booms, there would be no incentive for wholesale customers either to worry about their peak demands or to economize in the use of energy.

The importance of the time element in fixing the demand charge in the wholesale market may be illustrated by the requests of various industrial concerns, even during the prosperous years preceding the panic of 1929, for a change in the manner in which the power companies compute demand charges. It was the contention of the industrials that the power companies should compute the demand charge on, say, a monthly rather than on an annual basis, so that the high demand of the seasonal peak load of their fluctuating business would not apply throughout the entire year. But it is clear that if such a request were granted, it would require the power companies to make additional capital expenditures and to enlarge their plants to a greater extent during business booms than continuation of demand charges on the yearly basis would necessitate. Clearly the plan of making the highest demand of industrial consumers, during a month, the basis of their demand charge for the year would cause these customers to be very careful not to make occasional extraordinary demands for power. Indeed, some industrials have installed devices to prevent their demand from exceeding a certain amount. It is evident that if an industry generated its own power, it would weigh carefully whether it would attempt to meet a seasonal or extraordinary demand for its product if it meant that it must invest in additional generating equipment before it could do so. In such a case, it might decide not to accept the temporary benefit of supplying a seasonal or extraordinary demand for its products if it meant investment in power plant which would be idle for, say, 11 months in the year. If a group of wholesale consumers can make unlimited demands upon a power company, the latter is obliged to provide much additional plant which later on may be used much under capacity if, indeed, it is not idle most of the time during a business depression. It would appear, therefore, that there is no sound economic basis for the request of industry that demand charges be changed from an annual to a monthly basis.

Another demand sometimes made by industry deserves consideration. Industrial concerns sometimes contend that they ought to be able to know in advance what their power costs will be,

otherwise they will be unable to make contracts for future delivery. But if an industry generates its own power, it must run the risk of advances in the cost of power, and the question may be raised whether industrial concerns whose rate of return is not regulated by the government should be relieved of the risk of increased costs of power during a business boom and the burden of such increased power costs shifted upon a power company whose rate of return is limited by the government. Again it is to the interests of domestic consumers that this matter be given the attention to which it is entitled.

It should be said to the credit of industrial customers that many of them consented to changes in long-term power contracts during the period of the Great War and agreed to the insertion in those contracts of so-called coal or oil clauses which provided for increases in the cost of power in accordance with a sliding scale of advancing coal or oil prices. It was clear that the sharp advance of prices during the period of the Great War, to which some reference has already been made, was meaning heavy losses to power companies which had agreed to sell power to industries at a stipulated rate for a period of years. The justice of putting a rider on these long-term contracts providing for increased power rates was clear to business men when they realized that, if they were generating their own power instead of purchasing it, they could not have escaped the increased costs of fuel, to say nothing of the advance of many other costs.

The power companies learned the lesson of increased fuel costs during the Great War and have since that time generally incorporated coal, gas, or oil clauses in long-term power contracts.[19] But as has been said, the boom period before the panic of 1929 was not one of rising prices; yet it is clear from the data in Table II that such periods bring about marked expansion of public utility plant to serve industries which later use little, if any, public utility service.

The historical development of rate making shows that mental inertia has been largely responsible for the fact that the rate for the energy itself has been, generally speaking, relatively too high in comparison with the charges of a fixed nature which should have been incorporated in wholesale power rate schedules. During periods of prosperity the power companies were not much embarrassed with their illogical rate schedules, because the volume of power consumed was so large that the total revenue collected from large industrial consumers was adequate to compensate the power company. This fact is apparent from the data in Table II. But in periods of long drawn-out business depression, the situation becomes very different. Power companies then experience serious curtailment of the amount of power consumed, which in turn so greatly reduces the revenue which they are able to collect from industrial customers that, in some instances, it may not actually cover the fixed costs involved which had been incurred to serve these customers. Indeed, in some instances large industrial consumers practically cease to consume power. This leaves the power companies carrying the burden of the investment which had been

[19] The first coal clauses appeared about 1917. Now the practice is universal. I am indebted to Mr. J. C. Garver, who as a research scholar has furnished me with much detailed valuable information concerning the use of coal and oil clauses in electric rate schedules. The data are available in the annual rate books of the Edison Electric Institute since the year 1917.

made to meet the peak demands of the industrial customers during the business boom.

The foregoing argument might seem to imply that if power companies made low energy charges and adequate demand charges, they would probably have no grief as a result of a depression. But such is not the case. Even properly constructed power rate schedules will not enable power companies to escape the inevitable loss occasioned by a severe slump in business. A power company could gain little in the long run by sending a sheriff around to collect even a demand charge from a concern which had not been consuming a single kilowatt of energy if that concern was on the verge of bankruptcy. Prudence might dictate some abatement even of the demand charges in order to help the concern to get on its feet. If the industry involved were able to start up again, it would probably be good business for the power company not only to abate the demand charges somewhat but also to reduce the rate for the energy. If power companies do not lower both fixed and energy charges to wholesale competitive customers in periods of rapidly falling prices, they are likely to lose these customers. There is no comfort in pointing to a commission or court decision and contending that if the power company follows such a course it will not be receiving a fair return on a fair value, because the return it can secure if it loses its industrial customers may be even further reduced. The utility is really helpless in the matter and has no way whatever of holding such wholesale competitive customers, except through such a reduction in the total price for power as will prevent the industrial from installing its own power plant. Thus, during the present depression, the power companies have been obliged to reduce[20] or to modify their demand charges as to the period of time to which the charges were applied so as to make them less burdensome to industries. Energy charges have also been reduced.

If the foregoing analysis of the wholesale market is sound, it would appear that demand charges should ordinarily be a relatively more important part of total charges to industrial customers. To repeat, rate making can and should be used to hold certain parts of a market in check as well as to encourage to the fullest possible extent the growth of other parts of the market. The rate making policies of many of the power companies tended to overstimulate the wholesale market for power before the panic of 1929 and did not sufficiently stimulate the development of the domestic market. Some of the power companies have themselves been surprised to see the importance of the domestic market as a back log during such periods as the last five years.

Simplicity and Uniformity

Space does not permit a discussion of domestic rates, but it may be pointed out that the recent increase in domestic business has been brought about by an important improvement in rate making for that market. Just as there is need for broad differentiation in rate making for the domestic, commercial, and industrial markets, so there is need for further subdivisions and classifications of all of these markets if the rates are to be economically sound.

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[20] Some power companies, anxious to correct the illogical schedules in vogue during the business boom, actually increased their demand charges but at the same time made sufficient reduction in the energy charges so that the total bill was actually reduced.

Even after the power companies broke away from the illogical domestic rates with uniform rates per kw.-hr., they failed to recognize the fact that the so-called top rates for the domestic market were applied to too large a block of consumption to encourage liberal use of electricity in the home. When domestic consumers complained about domestic rates, they naturally focused their attention upon these high top rates. The utilities for some time were shortsighted in their defense of these rate structures. In defending the top rate, they did not appreciate that it could really be defended only if it applied to a very limited number of kw.-hrs. and that what domestic consumers really wanted was to be able to make very liberal use of electricity and yet have a low total bill. Some forward-looking utilities had already sensed this situation before 1929, and had done a good job in the development of the domestic market with very low follow-on rates after a very small initial use, but it took the panic of that year and later the government's TVA program to impress this fact indelibly upon the minds of the industry generally. A careful analysis of the economic characteristics of the domestic market ought to make it clear that different prices for different volumes of consumption or for consumption at off-peak periods are as essential to the full development of that market as they are in either the commercial or industrial market.

One aspect of the popular demand for simplicity in rates is that rates should be uniform throughout the state or region served by a large power system. In 1920, the Wisconsin Commission made rates on what was called a group or loop basis involving about 25 cities or villages.[21] On a theory long followed by the Interstate Commerce Commission, that no place should be robbed of its geographical advantages in rate making, the Wisconsin communities located near the source of hydro-electric power contended that they should have lower rates than communities that were served over long distance high tension transmission lines. The Wisconsin Supreme Court overruled the decision of the Commission, because the Court interpreted the Wisconsin law to the effect that rates for public utilities had to be made on a municipal basis.[22] About seven years later the Wisconsin legislature changed the law so as to make group rates legal.[23] In some states by commission order rates have been made uniform on a state-wide basis not only for the domestic and commercial service but also for the wholesale industrial market.[24]

Uniform rates over a wide area for the domestic market (at least for lighting) are equitable from the point of view of both the public and the public utility.[25] The Wisconsin communities that demanded lower rates because of their location near a hydro site overlooked the fact that the other

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[21] 25 Wisconsin RR. Reports 88 (The Wisconsin-Minnesota Light and Power Company).

[22] *City of Eau Claire* v. *Railroad Commission*, 189 N.W.476; 178 Wis.207; PUR 1922D, 666.

[23] Section 2 of Sec. 196.03, *Statutes*, 1929, reads: "For rate-making purposes the commission may consider two or more municipalities as a regional unit where the same public utility serves said municipalities, if in its opinion the public interest so requires."

[24] Some examples of such rate making are *City of Mobile* v. *Alabama Power Co.*, PUR 1929A, 458; Georgia Public Service Commission decision No. 16981, November 13, 1929; Georgia Public Service Commission decision No. 18195, April 15, 1931.

[25] Obviously there would be no justification for making uniform rates for rural customers and domestic customers in the various communities throughout a state.

customers some distance away helped to make possible the large scale operations which in turn meant lower unit costs of power. The English economist Marshall has pointed out that the "representative firm" is one that is so constituted that it obtains the maximum of "external and internal economies." Large units in the power field, and especially expensive hydro units, are made economically possible only by giving service to a far flung market.

But there is another score on which uniform domestic rates over a wide area are justified, and that is on the basis of the value of the service to the consumer. Electrical energy for domestic use (with the possible exception of heavy duty appliances) has practically the same value to all consumers. But this may not be true of large industrial consumers within a large area.

If costs of industrial power are about the same for all industrial plants throughout such an area, then uniform rates for large industries are feasible. But if conditions throughout a large regional area[26] are such that the cost of industrial power is high in one section and low in another, uniform power rates for industrial customers in such a region are unsound. If we are to continue to develop very large power projects, even though we do not also develop direct current transmission, this may be a vital problem very soon. The economics involved in sound rate making for such a market is entirely independent of the form of the ownership and operation of the power projects.

It should be borne in mind that the sound economic basis for computing rates for the highly competitive industrial market is the cost to the industrial customers of generating their own power. Of course, if that cost is so low that the power company cannot serve such customers except at a loss, they should not be served. But so long as such customers will add anything to the power company's revenue, and thus make service to other customers any cheaper, they should be served.

If industrial rates are made uniform on the basis of the low industrial cost of power in one part of a large region, the industries in the high cost area are buying power for less than its fair market value. This is an injustice to domestic consumers as well as to the utility. If the rates are made uniform on the basis of the high cost of the industrial power area, the large power consumers in the low cost area will simply install their own power plants. It has already been pointed out that such a result will harm the domestic customers themselves.

The far western cities, such as Spokane, pay higher freight rates from the Eastern seaboard than the railroads quote to the coast cities, such as Seattle; if the railroads did not make rates which would enable them to compete with ocean carriers, there would be less efficient utilization of the railway plant and such places as Spokane would be required to pay even higher freight rates than otherwise. Potential power consumers with the alternative of having their own power plants in a region of cheap power costs are in the strategic position occupied by the Pacific Coast cities. They simply will not purchase power at rates based on high power costs when it is actually cheaper for them to make their own power.

[26] Some consideration will be given in the next article to the formation of Federal regional regulatory commissions.

Summary and Conclusions

In light of the economic characteristics of the market for electricity, it would appear that a demand for some automatic adjustment of rates or for simplicity and uniformity in rates does not give adequate recognition to fundamental economic principles. In the first place, rate schedules are complex because sound economics demands that they should be if they are to serve numerous segments of the market that have strikingly different economic characteristics. In the second place, flexibility in rates for radically different types of markets cannot be secured on a sound economic basis through some such simple device as the English sliding scale or the so-called Washington Plan.[27] And while no attempt has been made here to discuss the extent to which there may be need for flexibility in the rates for those parts of the market which are not highly competitive, it is evident that these rates must change as fundamental economic conditions change. Domestic rates were advanced during the Great War, and they have been reduced during the present depression.[28] It is evident that the rates to the seven divisions of the market for power as classified by the United States Census of Electrical Industries[29] require very different treatment. With the great variety of electric rates which are now being used by progressive power companies, the "average" rate would mean little, and there would doubtless be little gained by trying to use an automatic scheme instead of having direct adjustment of the various rates by a regulatory body. There is little chance that automatic devices could give due weight to unforeseen economic forces in making changes in various rate schedules.

Let it be repeated that the ends being sought, through the Washington rate plan, are highly desirable. Rates should be flexible in accordance with important changes in economic conditions, and the rate of return allowed to a public utility should have some relation to efficiency or inefficiency in management. But we are bound to be disappointed if we stake our faith on simple automatic devices to cope with complex economic problems. The solution then must be sought through intelligent and effective regulation, for which there is no reliable substitute. Obviously there is no reason why regulatory bodies should not make use of any automatic gadgets which will lessen the labor of regulation in arriving at sound conclusions, but the successful use of various so-called automatic controls will depend upon well-equipped and able public utility commissions. Constant changes of the economic forces affecting rate making, especially for the wholesale market which yields more than one-fourth of total revenue, call for the highest type of managerial and regulatory ability and judgment, not for automatic formulae.

[27] It must be remembered that the principal business of the District of Columbia is politics and that it increases rather than decreases during a period of depression. Experience of a power company serving an industrial center would present a striking contrast in loss of business because of the instability of the industrial market for power.

[28] It is of interest to observe the following in the Emergency Railroad Transportation Act of 1933 which modified the Transportation Act of 1920: "In the exercise of its power to prescribe just and reasonable rates the Commission shall give due consideration, among other factors, to the effect of rates on the movement of traffic; to the need, in the public interest, of adequate and efficient railway transportation service at the lowest cost consistent with the furnishing of such service; and to the need of revenues sufficient to enable the carriers, under honest, economical, and efficient management, to provide such service." Act of June 16, 1933.

[29] See footnote 12.

THE THEORY OF A BUSINESS POLICY AUDIT

By PAUL B. COFFMAN

Corporate Management and Changing Conditions

ONE of the most difficult tasks of management is that of meeting changing conditions. If every executive knew exactly what was to take place on the morrow and what importance, if any, should be attached to the change, the work of managing a corporation would be considerably simplified. But it is seldom that an executive is aware of all the forces at work to produce change; and when such forces are called to his attention, it is seldom clear how they will influence his business or what can be done to meet the prospective newly-created situations.

The task of coping with changing conditions is ever present; it is not a creation of a period of prosperity or depression, although at times some of us are prone to believe so. An era of prosperity or a period of depression may foster or retard a change, thereby temporarily making the problem before the management appear more or less acute[1] as the case may be. At best, the influence of the business cycle makes more difficult the executive tasks of weighing the intensity and determining the direction of the forces at work to produce change or to maintain stability.

In regard to changing conditions, however, one observation must be made; that is, certain balancing adjustments appear to take place. The automobile, for example, was just getting a start in 1900. At that time, the roads in this country were generally poor and the price of gasoline was high. Before the automobile could become a great commercial success, it was necessary at least to have good roads, low gasoline prices, and a higher standard of living. As these three requirements became realities, the automobile industry grew. As the demand for the product grew, the individual companies grew, with the result that there were greater requirements for financing, production and distribution facilities, and control. As the automobile became more popular, the public became more interested. The result was that people were willing to buy stocks of the automobile companies, thus financing them; business men became interested in dealerships, thus providing distribution facilities. As the demand for automobiles in-

[1] Consider the effect of the commercial exploitation of the radio on the various piano manufacturing companies in this country. The Census of Manufactures shows that the value of pianos produced declined rom $37,998,695 in 1929 to $6,391,050 in 1933. Without question, the depression was partly responsible for this change, but the fundamental cause of the hange in piano sales and the problem that faced the executives of the piano companies was the competition of the radio; the Census of Manufactures shows that the value of pianos produced decreased from $104,362,578 in 1923 to $37,998,695 in 1929, while the value of radios produced increased from $26,979,000 to $411,637,000. Two conclusions can be soundly drawn from these data; namely, the depression made the problem before the managements of the piano companies more acute, and the era of prosperity from 1923 to 1930 fostered the sale of a new product. It is presumed that everyone will agree that if there had been no cycle influence from 1923 to 1934, the trends of piano and radio sales would have been about the same, although the figures might have been different, because the radio was the latest "wrinkle" whereas the piano was just an "old-fashioned instrument." The executives of piano companies still would have had a problem on their hands.

creased, engineers were faced with the problem of increasing production; thus interchangeable parts and mass production came about. As the companies became larger and larger, they became more difficult to control; thus new methods of accounting, statistical procedure, budgetary control, and other helpful devices were developed. This balance in the various divisions of an industry—finance, production, distribution, and control—can be observed in practically every industry[2] as conditions within the industry change.

Changing conditions, in so far as a given company is concerned, are produced, broadly speaking, by internal and external factors. These two terms, however, need clarification, for internal developments might be interpreted in any one of three ways: developments originating within the company, the industry, or all industries. If the first two meanings were used, then external forces could be all those arising in other industries, or through legislation and social unrest, or acts of God. If the last meaning were used, then external forces could be only those created by law; by mob psychology, such as exists in times of war; or by acts of God, such as earthquake, drought and the like. For diagnosing the policies or position of a particular company, obviously some refinement in terminology is needed.

For the sake of clarification, the following definition is given: A force is internal if it originates within the company under consideration; it is then quasi-external to all other companies affected; it is strictly external if it does not originate within a company.[3] Whatever action originates within a company is within the knowledge of the management,[4] whereas the influence of such an action upon other companies in the industry or upon other industries is for the managements of those companies or companies in other industries to decide. If the executives believe that the force is to have considerable influence, their option is to take some action that will set in motion a counterbalancing force or series of counterbalancing forces. Such action, however, is defensive, not offensive, as clearly indicated in the Warner Bros. Pictures, Inc., situation described in the footnote. Whether it is better to set in motion an internal

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[2] In contrast to the automobile industry, in a decadent industry such as the wagon and carriage industry, the reverse will be true; namely, as people lose their interest the demand for the product falls off, dealers drop out, new financing is difficult, engineers look elsewhere for employment. The result is a general shrinking of all the divisions of the industry.

[3] The force created by the development of the movietone (sound-on-film) process, the patents for which were taken out and held by the American Tri-Ergon Corporation, owned by William Fox, for example, under the above definition was internal to the Fox Film Corporation, which was first to know about and to have the use of such process, and quasi-external to all other motion picture producing companies. The importance of the distinction between internal and quasi-external becomes clear when the experience of Warner Bros. Pictures, Inc., is considered. When sound pictures became a commercial possibility in 1926, there was a mad rush by all motion picture producing companies to protect their competitive positions by developing some sound process or by making arrangements to lease such a process from a licensor. Warner Bros. developed and adopted the Vitaphone (sound-on-disc) process. This process soon proved to be less satisfactory than the movietone, with the result that Warner Bros. had to lease the use of movietone from the Fox company and install movietone equipment in many of its theaters. The latter was very expensive since many of the theaters already had been equipped with Vitaphone equipment. In contrast to the internal and quasi-external forces is the strictly external, which is represented in the same industry by the church drive for "clean" pictures which proved effective in the middle of 1934, when the motion picture industry adopted a self-censorship plan.

[4] How the executives manage that which is within their knowledge and control is another question.

force and be on the offensive depends to a large extent upon the ability of the management and the conditions under which they are operating. Certainly, Warner Bros. Pictures, Inc., had little advantage in their internal force which was represented by the development of the Vitaphone process.

Obviously, the question of change is a large one, and the subject of change is one which needs considerable classification. To my knowledge, such classification has not yet been made. The task of classifying changes as they are experienced by the business executive in our dynamic economy, however, does not come within the scope of this paper. It is presumed that all observers will grant that, broadly speaking, acts of God and acts of man continuously create multitudinous changes and that each of these changes in turn creates a new problem for the executive of the company which is likely to be or is actually affected. If it is granted that there are multitudinous changes affecting business, then the thesis of this paper, which presents a method of ascertaining the nature of a business problem and a procedure for solving the problem, can be presented.

"The Theory of a Business Policy Audit" divides itself into four main classifications: Defining the Situation, by surveying the forces at work; Considering the Possible Courses of Action or Crystallizing the Limitations and Possibilities; Adopting and Inaugurating a Plan, that is, establishing a follow-through; and Devising a System of Control, or checking the follow-through. Each of these main divisions of course has a number of sub-divisions. For the purpose of establishing the point of view at the outset, an outline of the theory is presented below:

Outline of the Theory of a Business Policy Audit

I. Define the Situation
  1. Surveying the forces at work
    a. List the forces—external, quasi-external and internal
      (1) Favorable
      (2) Unfavorable
      (3) Neutralizing—counterbalancing
    b. Weigh their intensity
      (1) Major
      (2) Minor
    c. Eliminate the minor forces
    d. Determine direction of remaining forces
    e. Compute time zone for each force
    f. Approximate present situation of company

In view of above

II. Consider Possible Courses of Action
  1. Crystallizing the limitations and possibilities
    a. List possible courses of action
    b. Establish use value of corporeal assets
      (1) Fixed plant
      (2) Machinery
      (3) Working assets
    c. Appraise use value of incorporeal assets
      (1) Abilities
      (2) Personalities
    d. Determine the flexibility factor
      (1) To what extent the corporeal and incorporeal assets can be changed
    e. Eliminate courses of action which appear impossible
    f. Compute time zone for adaptation
    g. Select best course of action

Which places you in position to

III. Adopt and Inaugurate a Plan
  1. Establishing the follow-through
    a. Outline the steps to be taken
      (1) Thinking plan through first
      (2) Discounting possible ramifications

b. Organize steps to assure proper sequence and balance
(1) Eliminate inconsistencies
(2) Avoid conflicts
c. Provide for modification or revision
d. Set up possible alternatives
(1) Safeguard in event first plan fails, or
(2) External conditions make change imperative
e. Coordinate in view of time factors already established

And finally to

IV. Devise a System of Control
1. Checking the follow-through
a. Select proper men for various jobs
b. Adopt best arrangement of organization
(1) Define clearly authority and responsibility
(2) Eliminate overlapping
c. Perfect accounting and methods of reporting
(1) Line up with organization
(2) Tie in all phases
d. Make use of budgetary control
e. Collate internal and external information
f. Proper interpretation and action

Diagnosing the Situation

The first step in business diagnosis is to approximate the given situation. Because of the interaction and interrelationship of forces in our dynamic economy, there are few business situations which can be defined with a high degree of accuracy. The best that can be expected from a thorough analysis of any combination of forces affecting a company is a reasonable approximation of the situation. To make an exact determination, at least two conditions which are seldom, if ever, present in business are necessary; namely, that comparatively few forces be at work, and that comparatively few changes in each force be possible contemporaneously.[5] Even if these two conditions were present, it is likely that the time required to make an exact determination would detract from its usefulness. Moreover, when conditions are dynamic and changes occur with varying degrees of speed and intensity, an approximation may be more serviceable than an exact determination, for the reason that after an analysis is begun, cognizance can be taken of new forces without disrupting either the processes of approximation or the approximation itself.

To begin an approximation, it is necessary first to survey the forces at work. This is best accomplished by listing all the forces which, for all practical purposes, can be conveniently classified as favorable, unfavorable, and neutral.[6] This listing process,

[5] Professor Lawrence J. Henderson, in "Pareto's *General Sociology*, A Physiologist's Interpretation," Cambridge: Harvard University Press, 1935, states in Note 4, Determinancy and the Properties of Systems, that "To think in words about many things simultaneously is impossible," and "To deal with many variables in mathematical work is likely to be excessively inconvenient. Therefore, it is desirable that the classes of variables should not be too numerous. For the logical analysis, the fewer they are, the better."

[6] A favorable external force, from the viewpoint of any glass manufacturing company, such as the Owens-Illinois Glass Company, was the abandonment of prohibition, for by virtue of this there was an increased demand for bottles which increased the volume of many glass manufacturing companies. On the other hand, the same force was unfavorable from the viewpoint of many manufacturers of carbonated beverages, like Whistle, Moxie, or similar products, for the manufacturers of such products were going to feel keenly the increased competition produced by the return of beers, ales, and liquors. The development of a new and reputed low-cost process for making a rubberized cloth called lastex was a favorable internal force for the United States Rubber Company which manufactured it, but an unfavorable quasi-external

however, is not as easy as it may appear; the task of discovering all the forces at work is a difficult one, primarily because the forces at work are multiple and their interaction and interrelationships complex.

After all the forces are listed, their intensity must be measured and weighed. One must decide to the best of one's ability whether a force is strong or weak and what its influence upon the business will be. For example, all forms of entertainment compete for a portion, if not all, of an individual's leisure time. Thus, an executive of a motion picture producing company, among other things, had to decide a few years ago what influence the radio and miniature golf would have upon theater attendance. The demand for radios, although not so intense, was to be permanent, whereas the demand for miniature golf was very intense but only temporary.[7] When all of the various forces have been listed and their intensity weighed, they can then be classified according to major and minor influences. This is the first opportunity to simplify the process of approximation by eliminating all the forces which seem to be of little consequence.

After the minor forces have been eliminated, the direction of the major forces must be determined. Generally, so far as direction is concerned, it can be said that there are divergent, parallel, and converging forces. But at a specific time the influence of a force upon a business depends upon its intensity and position in the path it is following. For example, the International Paper Company, about 1925, entered the public utility business by producing power for the general market. In so far as the company produced power for its newsprint mills, this was a parallel force and could be no more effective than the production of newsprint with which it was associated. On the other hand, the production of power for general sale was a divergent force, for it was setting in motion a series of functions which were unrelated in many respects to newsprint production—more closely related to the public utility business—and therefore would create new problems. By way of another example, the Baldwin Locomotive Company in 1930 issued notes to bolster a poor financial condition caused by poor business and a large expansion and diversification program. The notes fell due on March 1, 1933. The convergence of a severe depression with the maturity date of the notes placed the company in a very embarrassing position. Whether the convergence or divergence of forces will produce good or bad results is dependent upon the class and nature of the forces converging or diverging.

When the direction and position of a force in its path have been determined, a time zone[8] must be placed upon it.

force for the manufacturers of elastic webbing, a rubberized cloth made by an older and reputed to be more expensive process. The levying of a 4¢ tariff on copper in 1932 was a neutralizing force so far as many of the mines in this country were concerned, for it had the effect of making copper which could be produced in South America for between 4¢ and 5¢ cost approximately 9¢ laid down in New York, which price was equivalent to the cost of production of copper at several of the mines in this country.

[7] The executives of railroad companies had to weigh and measure the intensity of the competitive force created by the development of automobile passenger cars, buses, and airplanes as new large-scale methods of transportation. By way of a different illustration, the Jantzen Knitting Mills had to weigh and measure the competitive force of the new rubber bathing suits which were placed upon the market by several of the manufacturers of rubber products.

[8] Dean Wallace B. Donham emphasizes the importance of time zoning in dealing with variables in his book, *Business Adrift*. New York: Whittlesey House, McGraw-Hill Book Company, Inc., 1931.

Whether the time zone is short, medium, or long is of great importance. An example of a force having a short time zone has already been mentioned (miniature golf), wherein the competition for an individual's leisure time was only effective for about one year and a half. The intense competition of the radio with the piano may prove to be effective only during a medium time zone (5 to 10 years), although the radio may continue as a less effective but permanent competitor. Of a long time zone variety is the competition of buses with railroads. Time zoning is most important in business diagnosis, for in many instances it clearly indicates whether, if an unfavorable force is already in operation, the setting up of a counterbalancing or neutralizing force would be of any avail before the unfavorable force becomes competitively effective.[9] Although time zones on most forces cannot be established with the same degree of exactitude as in the case of the maturity date of a bond, time zoning nevertheless is very helpful for the purpose of approximating a business situation.

The preceding paragraphs indicate that surveying the forces at work in business is accomplished by four different steps; namely, listing the forces, weighing their intensity, determining their direction, and computing their time zone or duration. When each of these has been carefully worked out, a fairly accurate approximation can be made of a business situation.

Possible Courses of Action

The second step in business diagnosis is that of considering the possible courses of action. Depending upon time, place, and circumstances, there may be many or few courses of action. For example, to take an extreme illustration, it is doubtful whether the Studebaker Corporation had any other possible course of action on March 20, 1933, when the directors consented to a friendly receivership. On the other hand, the Hamilton Woolen Company, which had experienced labor trouble during the last quarter of 1934, could have done one of several things because of its excellent financial position; namely, liquidate or sell out, move to another town, attempt to maintain an open shop, accede to labor's demand and operate a closed shop, or keep the plant closed until labor became more reasonable.[10] Whether a company has any option in what course it follows is of the utmost importance in diagnosis. But to ascertain this fact, a definite analytical procedure proves helpful.

Crystallizing the limitations and possibilities is an indispensable phase of the procedure, the approach to which begins with a tentative listing of the various courses of action. The list should be as complete as appears reasonable under the circumstances and in view of the facts which have been brought into clear relief by the process of surveying the forces at work, described on pages 438–439.[11] On the other hand, certain courses of action which upon first consideration might appear to be out of the question, for

[9] The most exact example is that of a company financing its operations with bonds. If, before the bonds are issued, it is not clear that expense and income can be so budgeted as to meet the interest and sinking fund requirements in the time zone prescribed by the maturity date of the bonds, there is no justification for issuing them.

[10] Actually, the assets were sold early in 1935 to another company.

[11] If the National Industrial Recovery Act had provided that no corporation could liquidate to avoid the demand of labor but had only the option of turning the plant over to the government, then that would have been a force which would have precluded liquidation as a possibility for the Hamilton Woolen Company to meet its labor problem.

general reasons and not because the nature of the forces at work has eliminated them, may prove to have possibilities as the analysis advances. Nothing should be eliminated from the list unless the forces at work necessitate the elimination or unless the method to be explained next has been applied and the item has been found to be unsatisfactory. Crystallizing the limitations and possibilities means the selection of the best possible course of action by a process of elimination, all factors being considered.

After the list of courses of action has been checked against the forces at work and those courses of action eliminated which do not seem applicable in view of the nature of the forces at work, the next procedure is to check the courses of action against certain other factors. These are the corporeal assets, the incorporeal assets, the flexibility of the two, and the time zone required (if they are flexible) to adapt them to the forces at work, or, in other words, to adapt them to the changing or changed conditions. This part of the theory is just as applicable to a going or a new business as was the first part, wherein a method of analyzing the forces at work was outlined. For example, a manufacturer has plant, property, and experience, while an individual who has just won the Irish Sweepstakes, inherited money, or sold out a business, has cash (he may or may not have experience). Both of these individuals have to go through the same process of reasoning to decide what they can do. They will both consider the forces at work, they will both decide what limitations attach to their opportunities by virtue of their tangible assets, their ability, their flexibility, and the time available to adapt themselves to new and changed conditions. In other words, they will make an estimate of their salvage value in attempting to adapt themselves to new circumstances.

Some estimate of the use value of the corporeal assets, which comprise the fixed plant, the machinery, and the working assets, must be made. A distinction is made between use value and dollar value, because if a certain property is to be carried on, that is one thing; if it is to be dismantled, that is another. For example, it has not been uncommon in many cities in this country during the past five years for holders of rentable property, regardless of whether it was for office, store, or manufacturing use, to tear down the building and convert the land into a parking lot. In some cases buildings have been demolished and a motor mart constructed in their place. But when this was done it must be recognized that the entrepreneur entered a new business and that there was no salvage whatsoever, except savings in taxes on the old plant and equipment. Or, to look at the matter from another angle, John D. Ryan, Chairman, and Cornelius F. Kelley, President, of the Anaconda Copper Mining Company, sent a letter to stockholders in 1930, in which, among other things, they said:

> It may not be deemed within the province of the directors or officers of a corporation to comment or advise upon the true value of its property as compared to current prices. However, at this time of hysteria, unfounded rumor and prevailing pessimism, we believe it is not only proper but the duty of those charged with the responsibility of managing the investments of many thousands of shareholders to call your attention to the fact that all of the mining properties of your company, developed, equipped and constituting as a unit the largest and most valuable copper properties and copper ore reserves in the world, together with the many millions of dollars that were expended in their develop-

ment and preparation for operation, are, at current quotations for the stock of your company, selling at less than nothing.

Part of the difficulty in the copper company was caused by the depression, but the application of the idea of giving attention to use value is universal.[12]

A similar appraisal must be made of the incorporeal assets which comprise the abilities and personalities. Although these are wrapped up in the same human bundle, they must be treated separately as well as collectively, for there are various combinations; namely, little ability and little personality, great ability and little personality, little ability and great personality, and great ability and great personality. Unfortunately, the latter combination is not very frequently found. Yet from an organization point of view,[13] especially when new courses of action must be considered to meet changing conditions, it is necessary to appraise the abilities and personalities. An extreme example is that of the late Mr. Steinmetz of General Electric fame who loved to smoke while he was working and, when informed that it was contrary to company policy, is reputed to have said: "No smoke, no Steinmetz." Mr. Ivar Kreuger apparently had a winning personality but questionable ability. A large variety of additional examples could be given to prove that the abilities and personalities have to be appraised on value in the same fashion as the corporeal assets, for although a man does well under one set of conditions, it does not follow without establishing the fact that he will do well under another.

Appraising the use values of the corporeal and incorporeal assets, when properly done, leads automatically to a determination of the flexibility factor, which is all important. If both types of assets have considerable use value because they can be adapted to new and changing conditions, then their flexibility factor is high. Contrariwise, if they have little use value because they cannot be adapted to new and changing conditions, their flexibility factor is low. For example, the International Paper Company, as already noted, had no great difficulty in converting its power sites and plants from an industrial use to a public utility use. On the other hand, its opportunities in altering the purpose of its newsprint mills were more restricted or limited; some of the mills were converted into manufacturers of high grade bond paper, but in many cases it appeared wiser to close a newsprint mill than to attempt to adapt it to some other purpose. Most plants and machinery today are fairly specialized so that there is not a great deal of flexibility in this respect.[14]

[11] The Studebaker Corporation within the last two decades, for example, had to decide whether its plants were to continue in the production of farm wagons or whether they would be converted into automobile manufacturing plants.

[12] F. J. Roethlisberger and W. J. Dickson in *Studies in Industrial Research*, "Technical vs. Social Organization in an Industrial Plant," conclude that in any social institution there is a technical organization and a social organization, and that "a failure to distinguish between the technical and social organizations often leads to errors of interpretation."—p. 27.

[14] Again, executives of piano companies, among other things, had to decide whether they would engage in the manufacture of radio sets. So far as radio cabinets were concerned, a piano company's wood-working shop could make radio cabinets as easily as piano cabinets, but beyond this point there was no further salvage of either ability or plant and equipment; for a radio instrument falls into the electrical industry whereas a piano does not. If executives of piano companies had decided to manufacture radios, it would have been necessary for them to recruit a new organization and purchase new equipment. If they had decided to assemble radios, they would have found their old staff too expensive for the job.

These considerations are very important, for it is of no avail for a management to attempt to meet new conditions with corporeal and incorporeal assets that have low use value and therefore a low flexibility or adaptability factor.

Once the use value is established, the next task is to determine the length of time it will take to make the adaptation, or, stating it differently, to time zone the flexibility factor. This time zoning is perhaps the most important part of the entire diagnostic process, for in the process of surveying the forces at work a time zone was established for each force, and if these time zones are shorter than the length of time required to adapt the assets to a new purpose (*i.e.*, the time zone of the flexibility factor), either it will be futile to make the change or the action will be less effective because of its lag behind the force it is to meet. One illustration of this was the Ford Model T. By 1926, there was considerable evidence that there was a growing demand for a low priced motor car with gear shift, high speed motor, and an attractive body design in color. Within two years, the force of the changing desire of the consumer was to be completely effective. On the other hand, the Ford motor plant was so highly specialized that retooling for new models was a major operation. The development of a new model also would consume considerable time. Mr. Ford was late in developing the Model A; statistics indicate that his withdrawal from the market in 1928 to complete his change of plant and get the new models under way proved a serious handicap.

The time zoning of forces and the flexibility factor of the assets has the further advantage, if properly done, of setting the deadline for the effective application of foresight.[15] This point will be indicated when the time zone for the force to reach maximum effectiveness coincides with the time zone fixed for the flexibility factor on the assets. If, for example, application of the principle of surveying the forces indicates that the time zone for a certain force to reach maximum effectiveness is three years, and the application of the principle of limitations and possibilities on the assets and abilities indicates that it will take three years to change the assets and abilities to meet the force, the deadline point on the application of foresight has been reached. Obviously, these calculations, as already observed, cannot be exact, but this is of no great consequence. The important consideration is that the application of this type of thinking to business problems can be productive of some very good results, which otherwise could seldom, if ever, be attained.

From the foregoing discussion, the following digest can be made of the first two steps in the theory of diagnosis: Surveying the forces (internal, quasi-external, and external) at work in business enables one to approximate the situation faced by a company. In this process, the forces of no significance are eliminated. Next, the possible courses of action to meet the situation are considered in view of the forces at work. Such a procedure definitely eliminates certain courses of action as possible ways of meeting the situation, thus simplifying the number of items to be considered. This is followed by crystallizing the limitations and possibilities of the assets and abilities, which, applied to the list of

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[15] For a discussion of a theory of foresight, see Chaps. 1 and 2 in *Business Adrift*, by W. B. Donham, *cit. supra.*

courses of action, further eliminates certain alternatives. From the few remaining possible courses of action, that one can be selected which best seems to meet the situation. At this point in the theory diagnosis ends and prognosis begins.

Adoption and Inauguration of Plan

In order to select the best course of action, it is necessary to carry the analytical process still further. If there were no way to test the remaining few possible courses of action to ascertain which would prove most satisfactory, all of the foregoing work would be of little avail. But a method of analysis can be applied which will pretty clearly indicate the best course of action and eliminate all the rest.

This procedure, for lack of a better description, amounts to establishing the follow-through. A course of action being a plan, it is necessary to decide where and how to begin, how to proceed, and to what end the plan leads. If a company because of increased business desired to expand its production, for example, there are several ways it could proceed: add one or two additional eight hour shifts; if the cash permitted, build an extension to its plant, build a new plant, buy an old plant and adapt it to the company's needs, or buy out a competitor whose plant would presumably meet the requirements. Obviously, the decision to increase production is one thing; the plan to carry out the decision is another. If the additional shifts of labor would supply the needed additional units, it would be wiser to follow this plan, for it requires no large capital expenditures and adds no additional plant capacity as the other plans do; such additional plant would add to overhead cost by way of idle capacity when the demand fell off again. Outlining the steps to be taken, organizing them to assure proper sequence and balance, providing for modification or revision, setting up possible alternatives, and coordinating all of these with the time factor comprise the follow-through.

Outlining the parts of the plan is a first essential, for it may be that in the outlining process it will become obvious that what appeared to be a possible course of action no longer proves to be one. If in the above example, for instance, it required a million dollars to add to the plant or buy one, and the company could not afford to make such an expenditure or find means of financing it, none of the courses of action except that of adding additional shifts of labor would be possible. The purpose of this process is to ascertain what the plan entails, not to see what the best arrangement may be. The latter can be provided for later. The primary consideration is that all the essential parts of the plan be thought through so that of the few remaining courses of action those can be eliminated which appear to have major drawbacks, such as the one just mentioned. Once this process has been applied, the executive must decide which of the plans remaining, if there is more than one, should be adopted.

After this decision is made, the next step is to organize the parts of the plan selected. In other words, careful attention should be given to the sequence and balance of the policies necessary to put the plan into operation. Failure to provide for the best organization of the policies could cause the plan to fail or at least to be less effective; for, after all, there are really two parts to the operation, namely, selecting the plan and putting it into effect. In the case

of the American Writing Paper Company, Mr. Galliver, who became president early in 1917, was fully convinced that he understood the problems facing the company and that he had a plan which would meet the difficulties. Actually, the plan, which involved centralized control, concentration of production, improvement of processes, and building of personnel, was reasonably sound, but by attempting to operate under the plan before the organization fully understood it or had time to be educated to it, the management failed to carry out the plan successfully and the company went into receivership. Here the parts of the plan were not well organized, for the educating and training of the personnel should have preceded any sweeping application of the plan.

In practically any plan, it will be found that one sequence of the various parts is better than any other. Such a sequence usually will be productive of greater balance within the operation of the plan as well as with the other operations of the business. All inconsistencies and conflicts between policies should be eliminated before the plan is inaugurated, or as soon as they are discovered. Naturally, what can be done in selecting the best plan and the best sequence depends to a large extent on one's ability, but if one is aware that such considerations as these are pertinent, one is more apt to select the best procedure than if one is not aware of their existence.

Since conditions are continuously changing, it is unlikely that any plan or sequence of policy actions can remain unchanged. Modification or revision should be provided for at the outset. If the plan and sequence adopted do not lend themselves fairly easily to change, there is some question whether the best plan and sequence have been selected. In 1932, the International Harvester Company offered to accept No. 2 hard wheat at 70¢ a bushel, No. 2 yellow corn at 50¢ a bushel at Chicago, and middling cotton at 8½¢ per pound at New Orleans, as part payment of the purchase of tractors and tractor-operated implements, the prices allowed being higher than the then current price. This offer was limited and subject to change without notice if conditions so changed that the offer could no longer be wisely continued. The farmers, on the other side, could exercise the option of selling the grain in the open market if the price went higher than the Harvester offer before the date of the payment.[16] This policy, whether sound or unsound, was at least flexible because it allowed for modification. The policies which are likely to be most effective are always those which can be adapted or modified to meet new conditions.

Modification, however, is not always provided for. It is not always possible. For example, a company may be sorely in need of financing but it may be able to sell only high interest-bearing short-term bonds. Because of such situations, it is necessary to set up a possible alternative. The best alternative may be the last course of action eliminated through the processes already discussed in the preceding paragraph. In adopting an alternative plan, however, attention must be given to the problem which necessitated a plan of action; that is, if the plan was inaugurated as a

[16] Contrast the case of the Simmons Company which in an expansion program acquired Berkey & Gay in October, 1929. Not being a suitable acquisition—for the Berkey & Gay products did not fit well with the Simmons products, although at first it was thought that they did—the Simmons Company let Berkey & Gay go into receivership in 1931. Mr. Simmons said: "This purchase was a mistake."—*Annual Report* of the Simmons Company for 1931.

defensive move, then presumably the company already had a problem to face either because of the policies inaugurated by other companies or because of changes created by external conditions. This consideration is important for the reason that if a certain time has elapsed in trying out the first plan, conditions, both internal and external, may have changed so that rather than adopt as an alternative a plan which had already been considered, it would be wiser to redefine the entire situation and begin over. Such a condition would prevail where a war was declared, a technological improvement revolutionized an industry, or where external conditions had changed so rapidly, as in depression, that the alternative plan previously considered could no longer be considered as an alternative.

It has already been noted that establishing time zones for the forces on the one hand and the flexibility factor of the corporeal and incorporeal assets on the other clearly define the period within which the management can adopt and inaugurate a plan. For instance, after becoming president of the International Paper Company in 1924, Mr. Graustein decided that it was necessary to revamp the assets of the corporation to meet the new and changing conditions. Competition was extremely keen, the company had been losing its position in the industry, its costs were high because its timber reserves proximate to its plants were exhausted, and prices of newsprint were low. After a careful survey of his company and of the industry, Mr. Graustein estimated that it would require five years to make effective a plan which was to include dismantling high cost mills, constructing new low cost mills in Canada, diversifying the company's products so that the company would not be dependent solely on newsprint, and developing intensively its water powers. In this particular case, however, the forces at work were not such as to establish a five-year deadline, so that if it had taken longer the plan was not doomed to failure but a certain advantage might have been lost had the rehabilitation process dragged. On the other hand, there are situations wherein the time zone definitely prescribes a limit within which action must be taken to be effective. In such a case there is no point in adopting and inaugurating a plan which, to be effective, requires more time than the time zoning process indicates exists.[17]

In summary of the first step in the prognostic process, it may be said that after the best course of action has been selected it is then necessary to formulate a plan to carry out the course of action. This process begins by outlining the steps to be taken, which is primarily a matter of first thinking the plan through and then discounting the possible ramifications. The next step is to organize the steps in order to secure the proper sequence and balance, to eliminate inconsistencies, and to avoid conflicts of policies. Realizing from the start that no plan can remain unchanged for long in a dynamic economy, provision must be made for modification and revision. Further-

[17] For example, to take a clear-cut case, when the Eighteenth Amendment was passed, it very definitely specified the time at which the law was to become effective. In so far as the brewers had not sensed the trend of public sentiment in regard to the liquor trade and had not done anything to protect themselves against the conditions that prohibition was to create, they had only a limited time to act, *i. e.*, the time elapsing between the date the act became a law and the date the law became effective. Hence, there was no use, under the circumstances, in adopting a plan which to be effective would have required a longer time than really existed.

more, there is always the possibility that the plan selected may not prove effective, in which case it is wise to have an alternative ready for use. When the above steps have been coordinated in view of the time factor already established by the process of surveying the forces at work and crystallizing the limitations and possibilities, the chief work of adopting and inaugurating a plan has been completed.

When the above various steps have been taken in adopting and inaugurating a plan, which is the beginning of the follow-through, only one step remains to complete the process, and that is setting up methods of control which will be effective as a check upon how well the plan is operating and as a source of information upon which the management can make decisions. These decisions may relate to modifying or revising the plan, by way of either altering its course or fortifying it, to abandoning it for an alternative and to the general trend of the company's affairs. Among other things, this control system should make it possible for the management to make a continuous review of the progress or retrogression of their company.

System of Control

With many forces operating outside the company and many set in motion within the company, it is necessary to have some means of checking the status of the company at all times. To be successful, the management must not only be familiar with the forces at work but must also have many of the forces under their control. For lack of a better title, the methods used in coping with the dynamic forces at work are called executive control.

The first and fundamental consideration in establishing effective control over a company's operations is the selection of the proper men for the various jobs to be filled. This is not an easy task for it is not always easy to appraise a man's ability until he has been on a particular job; it is not easy to attract a man of proven ability away from another position. In many companies, the best way to secure men is to train and educate them to positions of greater responsibility. Such a development, however, depends largely on the ability of the various executives to teach their jobs to others. This process needs to be carried all the way through the personnel. But the ability to train others, however, is lacking in many executives and proves to be a real handicap to the company.[18] To be a first class executive one must be a good teacher, a leader,[19] a good diagnostician, and a person of definite, quick, and accurate action. These qualities are, for the most part, matters of ability. An individual with learn-ability can do much in cultivating these qualities; without learn-ability there is little opportunity to train or to be trained. Thus one criterion to the

[18] One company, for example, whose name it is not necessary to mention, appears to have developed the technique of training and educating the employees down the line to the district sales representatives. Formerly, these men were wholesale salesmen of coordinate authority with retail salesmen in the district. This arrangement proved faulty for lack of proper delegation of authority and responsibility. To correct the latter, the wholesale salesmen were made district representatives in charge of the retail salesmen. This alteration in organization made some improvement, but the problem of how to get the best out of the retail salesmen in each district and hold their morale to a high point still remains pretty much unsolved.

[19] In the booklet, *The Growth of Chrysler*, published by the Chrysler Motor Corporation, the following statement appears: "The growth of Chrysler is a romance of American industry. Ask Walter P. Chrysler what is the secret of it, and he will answer: 'Fine organization'; ask the members of the organization what is the secret, and they answer: 'Creative leadership.'"

selection of proper men for the job is to select men with learn-ability.

Next is the development of the proper organization, or in other words, the proper relationship of men. To build an effective organization it is necessary to describe the position to be filled, that is, to define responsibility and authority. Without this no efficient organization can be built for the reason that overlapping of jobs and ambiguities as to the work to be done leads to ineffective application of ability as well as the breaking of a man's spirit. It frequently happens in many companies that friction arises between two or more individuals because each believes he has the authority to do a particular thing. Each time one of the individuals takes action under this belief, the other has his temper fired. Few people are clever enough to conceal such irritation, with the result that the employees in the department where the difficulty arises are under as much of a strain as the individuals who are handicapped by holding positions which are not clearly defined.

Formerly, much emphasis was placed upon the distinction between the types of organization; the merits of the line and staff or military organization, on the one hand, and of the functional organization, on the other, have frequently been argued. This emphasis, however, has lost its significance since under either of these types of organization inefficiency reigns if the jobs to be done are not clearly defined and the responsibility and authority attached thereto definitely allocated. The same remarks can be made in regard to the centralized and decentralized forms of organization. In other words, the success of any organization is determined by the effectiveness of the procedure followed in outlining the job through the process of delegating authority and allocating responsibility. One of the greatest shortcomings of the committee form of executive control is the difficulty in securing agreement and action when the ideas of two or more people are involved. The axiom that two heads are better than one has much truth in it, but it is also true that in a dynamic economy there is a premium on action and usually a penalty on delay. The best way to secure action is not by the form of organization nearly so much as by having each job well defined.

To define the job specifically, however, is not enough in itself; for the delegation of authority and the assignment of responsibility are only partially effective. There must be some method devised of checking results. One of the best methods of securing information about the way a job is being done is through the accounting records and through reports written from the data contained therein. The important consideration about the accounts, and one frequently overlooked, is that they should be so arranged as to supply definite information on each job as defined. If departments or special operations have been clearly defined, but the accounts are so set up that there is always considerable argument as to how the overhead is to be distributed among the departments or operations, the best results will never be secured. No man with any fight is going to continue to put forth his best efforts, regardless of how well defined his job may be, when month after month he feels that expense is being charged against him for which he is not responsible and over which he has no control.[20]

[20] A specific illustration is that of a textile company which had been having poor operating and financial results. To correct the situation, the president said

It is necessary when a new organization is being set up, or an old organization is being rehabilitated through the process of defining the job and delegating authority and assigning responsibility, to realign the accounts in keeping with the rearrangement.

To make the process just described more effective, budgetary procedure can well be adopted. The great advantage of budgetary control, if it is properly installed and operated, is that it is a good personnel training device, that it establishes a goal and keeps the eyes of the executives and subordinates continuously upon it, and that it supplies standards from which the effectiveness of operations can be measured. When a budget is inaugurated it may be wise to have rather complete and comprehensive forms and charts. These have no great value in and of themselves, but should be treated as lessons in budgeting. Each form that is filled out or each chart that is drawn should be experience and practice to make the individual more proficient. When each individual participating in the budgetary procedure has become very familiar with and efficient on the job, the forms and other paper work should be simplified and reduced to a minimum, for the paper part of the budget has served its purpose. Once an individual has gained the proper perspective, has learned how to tie his work in with others', and has come to realize that he is a part of a team, the success of which depends entirely upon each player playing his part, much of the paper work has served its purpose.[21] Unfortunately, too frequently it goes the other way; that is, the paper and chart work continue to grow until the "tail wags the dog instead of the dog wags the tail." The budget, like all other control mechanisms, is effective only in so far as it is wisely installed and operated.

Since executive control involves the task of balancing the operations of a company with the quasi-external and external forces, it is necessary to perfect some method of gathering data and information on such forces. Practically all of the well managed firms in the country today gather considerable information on business conditions, the activity and new developments of their competitors, the legislation proposed and passed by the government, and any other pertinent development. Trade associations, chambers of com-

that each mill and department was to be placed upon its own operations; in other words a profit control system was to be adopted. In order to make this system work, the mill superintendents and the merchandise managers were to have a free hand to operate their departments as they saw fit. The result of this procedure was that certain of the mill superintendents believed they could buy goods cheaper from outside sources than from the company's other mills and some of the merchandise managers believed they could get better results by dealing with outside styling and designing companies than with the company's own styling and designing department. Under this set-up, the mill superintendents buying goods from outside sources complained when they were charged for a portion of the cost of maintaining the company's purchasing department and the merchandise managers mentioned above complained when they were charged for a portion of the cost of maintaining the company's styling and designing department. Both the mill superintendents and the merchandise managers complained when they were charged for a portion of the cost of maintaining the company's two central offices. The number of examples one can find to illustrate this type of situation is infinite.

[21] Five years ago, the largest manufacturer in the world of a certain product adopted budgetary control. For the first three years, the budget required considerable paper work on both forms and charts. But at the end of that time the management believed that the organization was budget-minded or budget-conscious and well trained in budgetary principles. Hence, the management gradually simplified the paper work in order to permit the key and subordinate officers more time to think about the problems which faced them. This is the way that budgetary procedure should be developed.

merce, and research organizations are supplying information on numerous topics, companies are conducting market surveys to ascertain what changes are taking place in consumer demand, and departments of the government are publishing monographs based upon research in various fields of business. For example, the Bausch & Lomb Optical Company uses government statistics,[22] including releases on government relief expenditures, in the preparation of its budget; it secures the opinion of the leading business forecasters on the trend of business and from these the executives draw their own conclusions. From market surveys and other investigations, the executives have a reasonably good idea of what their competitors are doing. The managements of all other large companies are giving considerable attention to the quasi-external and external forces at work which are influencing the affairs of their own company.

When facts have been gathered on the internal operations and the external forces, the next step is to collate these. Obviously, a heterogeneous mass of facts is of no value; facts, to be of service, must be collated, digested, and coordinated before any intelligent use can be made of them. For example, it is becoming fairly clear that the government is going to increase its revenue by at least two methods; namely, by forcing companies to change their depreciation procedure and by forcing companies to distribute their undistributed profits. If a company has been charging depreciation at fairly substantial rates and at the same time has been maintaining the plant and machinery as close to 100% as possible and has been retaining a large portion of its earnings, the management had better correlate the trend of President Roosevelt's thinking with the trend of their own actions. This same sort of procedure can be followed with every other possible combination of internal and external forces or actions. The degree to which the executives can "put two and two together," to have a basis upon which to take action, determines the extent to which they will be best able to adapt their company to dynamic our economy.

The final test of managerial ability and executive control is the effectiveness and the precision with which action is taken. There are really four parts to this procedure: first, the gathering of the facts; second, the correlating of the facts; third, the digesting and interpreting of the facts; and fourth, the taking of action upon the facts. If all of these parts are properly developed, the results should be highly effective; to the extent that any one or all of the parts are not effectively developed, there will be less effective results. It must be observed that it is seldom possible to do any one of the parts perfectly. It is doubtful if any executive can ever secure all the facts on the external forces at work, correlate them perfectly with the facts related to the internal operation of the company, make a perfect interpretation, or take exactly the right action at the right time. All the management can hope for is as high an average in performing these functions as is humanly possible.[23]

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[22] *Year Book*, 1931, National Association of Cost Accountants, p. 212.

[23] Professor Arthur Stone Dewing once remarked that if the executives of a company in their decisions on major policies could be right 51% or more of the time, their company would be successful.

The great advantage of developing an effective control system is that it affords an excellent opportunity to check the effectiveness of the approximation of a situation and of whatever plan or plans were adopted and inaugurated. It thus supplies a method of continuously redefining the objective, affords an opportunity of ascertaining what modifications or revisions will have to be made in old plans, and indicates whether an alternative plan will have to be adopted.

It must be realized that the four steps outlined in this paper are contemporaneous in business. A company seldom starts all plans from scratch; one decision or many may be made in a single day, more the next day, and so on. An effective control system supplies facts every day, week, or month, which can be used to check the decisions that were made or plans that were inaugurated. Thus, business situations and objectives are continuously checked and redefined.

Conclusion

In the preceding paragraphs an attempt has been made to describe a method of ascertaining the nature of a business problem and a procedure for solving the problem. The theory (which for lack of a better title was called "The Theory of a Business Policy Audit") should prove helpful, for in our dynamic economy where there are a maze of forces and a labyrinth of changes, business problems and their solutions are not stereotyped. Each problem must be attacked afresh. Past experience is of no great avail. A premium, therefore, is set upon a method of diagnosing a business situation and planning a course of action.

Without question, considerable time will have to be spent in studying thoroughly the changes which take place in our dynamic economy with a view to working out some comprehensive classification. This was not attempted in the present discussion because it was outside the scope of this paper. The presumption was made that all observers would agree that acts of God and acts of man continuously create multitudinous changes and that these changes in turn continuously create new problems for the business executive. His task is to find out what the problem is and to take action to meet it. The approach outlined should be useful to both business men and business analysts even though a comprehensive classification has not yet been developed for the changes which take place in our dynamic economy.

Where change creates every conceivable type of problem, it is necessary for the executive to have some method of ascertaining the problem and some procedure for developing a solution. Because of the great number of variables involved in business operation, it is believed that a business situation cannot be defined exactly. But it can be reasonably approximated. Once a reasonable approximation is made, the next step is to decide what can be done under the circumstances with the corporeal and incorporeal assets involved. This analysis should finally enable one to select the best course of action to meet the situation as approximated. The next step is to adopt and inaugurate a plan, or in other words, prescribe a method for meeting the forces at work. Since change continues even though a good plan has been selected and placed in operation, it is necessary to expect that alterations in the plan will be required. Unless some means of checking the effectiveness of the plan is adopted, there is little advantage in

inaugurating the plan. Hence, the last step is to devise a system of control which will continuously supply information and enable the executive to ascertain how well he approximated the situation in which his company was placed and how well the plan he had selected was functioning.

Although in listing the various parts of the theory, it may sound as if each was a separate compartment, this is not true. The theory works as a continuous cycle. In other words, change creates new situations every day. Each of these must be approximated by the executive and upon each of these he must follow the procedure outlined, or some other approach. The result is that the executive is continuously approximating a situation, crystallizing the limitations and possibilities, adopting and inaugurating plans, and devising new systems of control. As the executive checks the plans already in force and finds them to be wanting, he makes alterations or modifications or may even find it necessary to scrap an old plan and adopt a new one. By such procedure, there is an endless cycle from approximating the situation to checking the follow-through and discovering that the plan is wanting or that the situation has so changed as to require a new analysis with the result that the process begins all over again.

One of the most important features of the entire process is the time zoning as applied to the forces at work and to the limitations and possibilities. Establishing a time zone for a force and a time zone for the adaptation of the corporeal and incorporeal assets definitely places a limit upon the effective application of foresight; for if the time for the force is shorter than the time zone for the adaptation of the assets, it is questionable whether the force can be effectively met. To understand this phase of the theory is very important. Although time zoning cannot be worked out exactly, this does not detract from the advantage of applying the procedure to the best of one's ability.

The next most important phases are the sequence, timing, balance, and convergence and divergence of forces. Little can be accomplished in business policy unless attention is directed to the question of which action is to be taken first. Getting the cart before the horse is likely to prove expensive. The same argument holds true for timing. Even a perfect approximation of a situation has no advantage if the action is taken prematurely, or too late. Balance automatically develops if the sequence and timing are carefully worked out. To decide when two or more forces will converge or diverge is difficult, but a business man has to make the best forecast he can. It is better to make the best approximation possible and to make modification as required than to give no thought to the subject because the difficulty of the task makes it appear hopeless.

This paper has been highly condensed. Much more could be said—not, however, in the page limitations of this article. But if in these few pages more interest has been stirred for developing an approach to or an attack on a business problem or group of business facts and less emphasis has been placed upon securing the exact answer or solution to such a problem, this paper has served its purpose.

RESTRICTIVE ACTIVITIES OF THE BRITISH TRADE ASSOCIATION[1]

By ARTHUR F. LUCAS

THE movement toward the control of competitive activity has shown an impressive virility in Great Britain during the past decade. A significant feature of this movement is the growth in the restrictive activities of the trade association. The association has become the most common form of organization in Great Britain, as is also probably the case in this country, and British experience throws considerable light upon its operation and general effectiveness.

The Post-war Development of the Restrictive Association

Although the trade association was no stranger to British industry even before the War, its restrictive activities have been greatly stimulated by the prolonged depression and the resulting program of industrial reconstruction. We do not need to discuss this program in detail here, as the author has described it in several articles in this and other journals.[2] The significant fact is that only by concerted action of an industry as a whole has it seemed possible to remove the obstacles that have been thwarting permanent recovery. The mounting inferiority of British producers has forced them to present a united front against the pressure of foreign competition. The failure of normal economic processes to produce a healthy industrial structure has caused the establishment of artificial agencies to reduce the congestion of redundant and obsolete productive equipment, to eliminate the many small and unintegrated plants, and to institute the many other measures necessary for technical efficiency. Internal competition has not only seemed to impose an effective barrier to the achievement of these reforms, but has also led to such severe price-cutting that many industries have lost whatever opportunities for profitable operation they might otherwise have enjoyed.[3] From this situation there has emerged a profound modification in the traditional British system of free competition, a development in which the association has played a leading rôle. Although rigid combination has also made rapid strides in recent years, it is still the association that forms the chief instrument for monopoly control in British industry at the present time.

We find, therefore, that while "British trade associations make little parade of their existence or achievements," as

[1] The author wishes to acknowledge the financial assistance of The Social Science Research Council in making this study.

[2] "A British Experiment in the Control of Competition," XLVIII *Quarterly Journal of Economics* 3, May, 1934, p. 418; "British Experiments in the Reduction of Excess Industrial Capacity," XII HARVARD BUSINESS REVIEW 4, July, 1934, p. 389; "The Bankers' Industrial Development Company," XI HARVARD BUSINESS REVIEW 3, April, 1933, p. 270; and "The British Movement for Industrial Reconstruction and the Control of Competitive Activity," XLIX *Quarterly Journal of Economics* 2, February, 1935, p. 206.

[3] The normal forces making for monopoly have, of course, also been operative. See my article previously cited in the *Quarterly Journal of Economics* for February, 1935, p. 210.

the secretary of a governmental investigating committee remarked, "there are few corners of British industry in which some kind of trade association is not to be found, and some of them can show a thoroughness of organization not easily surpassed."[4] It has recently been stated that there are about 50 price-fixing associations in the iron and steel industry alone.[5] Since 1931 the coal industry has been thoroughly regimented under regional boards, which rigidly control prices and output. In textiles most of the specialized sections, such as bleaching, dyeing, and woolcombing, have long been subject to the control of strong associations; and even the basic sections have recently been experimenting with the regulation of prices and output and the curtailment of productive capacity. Those sections of the chemical industry which are not affiliated with the Imperial Chemical Industries are almost completely dominated by associations. A long list could be compiled of other industries which in some degree have abandoned competition through the medium of the association.[6]

[4] Committee on Trusts, *Report*, p. 17. This Committee definitely named over 125 associations that were attempting to control either prices or output or both.

[5] National Committee for the Iron and Steel Industry, *Iron and Steel Reorganization Scheme*, p. 8. A plan has recently been adopted to consolidate these associations into not more than twelve sectional groups under the supervision of a general federation.

[6] The more important industries in this list would be milling, electrical equipment, cement, lead, brass, copper and other metals, shipping, most tools and machinery, jewelry, shoes and several other leather products, soap, salt, paints, lead oxide and white lead, many glass products, and optical instruments. There are many other associations, of course, that are not engaged at all in the systematic suppression of competition, although, on the whole, commercial activities are less developed in Great Britain than in America in spite of the fact that these functions have also been expanding since the War. *Cf.* Heermance, E. L., "Some Impressions of the British Trade Association," VI HARVARD BUSINESS REVIEW 3, April, 1928, p. 304.

The Chartered Association

With a few exceptions the organization of the British association has little to distinguish it from that of the American. The chief point of difference arises from the fact that many British associations register under the Companies Acts as private, limited liability companies. In legal phraseology, the association thus becomes a "company limited by guarantee and not having a capital divided into shares of stock." This means that personal liability is limited to a guarantee from the members of the association as individuals.[7] The guarantee is usually so small, however, as to be of little consequence; £10 is the most common amount. The implied powers of a corporation, such as the right to borrow money, to sue and be sued, and to negotiate contracts, are usually given without reservation. While some associations are completely prohibited from trading, others have nearly full powers. They are not permitted, however, to engage in trade for profit. They act simply as agents for their members, who thus become principals with all the responsibilities pertaining thereto.

An important difference between the incorporated association and the ordinary company is the fact that the members of the association may withdraw at will, or at least after due notice

[7] The Memorandum of Association of the Fertilizer Manufacturers' Association states, "Every ordinary member of the Association undertakes to contribute to the assets of the Association, in the event of the same being wound up while he is a member or within one year afterwards, for payment of the debts and liabilities of the Association contracted before he ceases to be a member, . . . and for the adjustment of the rights of the contributaries amongst themselves such amount as may be required, not exceeding £20." Companies Search Office, Somerset House, London.

has been given. It is this feature that retains for the association its terminable form of organization. In spite of the looseness of its organization the incorporated association has a permanence, a stability, and a prestige that materially enhances its effectiveness as an instrument for control. As the director of one association stated to the author, "It conferred upon us in effect a constitution under which we could proceed to substitute discipline for anarchy, to mobilize the industry behind a common purpose, and to enforce this common policy through a system of strong but representative government."

Control of the Channels of Distribution

In respect to its subject matter, restrictive activity will normally assume one or more of three main patterns: the closure of the channels of distribution to independent firms, the control of prices, and the regulation of output. The exclusion of existing or potential competitors from the normal channels of distribution is accomplished by such devices as exclusive dealing, tying contracts, resale price maintenance, deferred rebates, and trade boycotts. These practices are very common with associations and may also be used, of course, by individual firms as well.

The completeness with which British associations control their dealers is well illustrated by the program of the Electric Lamp Manufacturers' Association, the notorious "ELMA." This organization has an exceedingly autocratic classification of dealers with different trade discounts varying from 20% to 39% for each class.[8] A dealer is arbitrarily placed in his class not because of the nature of his trade, but because of the volume of his business. Resale prices and exclusive dealing are strictly enforced at all stages of the distributive process. A dealer that does not abide by the Association's restrictions is placed on the "list price nett" register and thus deprived of his normal trading margin. The Association also has an elaborate system of deferred rebates and does not hesitate to use the trade boycott. According to the Committee on Trusts, these policies have been so effective that "a manufacturer of electric lamps who is not a member of the Association has the normal channels of the distributing trade in large part closed against him."[9] This Association is not at all unique, however. Most well-organized groups follow similar programs.

Numerous associations have been formed for the express purpose of protecting the channels of trade of their members and do not concern themselves at all with the regulation of prices or output. There are several associations, for instance, which exist merely to enforce the maintenance of resale prices, which, as a recent investigation showed, is a "widespread and growing practice" in Great Britain.[10] The largest and one of the most aggressive of these organizations is the Proprietary Articles Trade Association, which includes in its membership about 450 manufacturers, 60 wholesalers, and 10,000 retailers.[11] It maintains a "Protected List" of about 10,000 articles, and it may fairly be claimed that there are few nationally advertised proprietary articles in the drug trade that are not included. Every article on the list has fixed

[8] Committee on Trusts, *Findings and Decisions of a Sub-Committee Appointed to Enquire into the Existence of any Trust or Combination in the Electric Lamp Industry*, p. 5.

[9] *Ibid.*, p. 8.

[10] Board of Trade, *Restraint of Trade*, p. 7.

[11] From information supplied by the Secretary.

minimum retail and wholesale prices determined solely by the manufacturer. If any dealer, whether wholesaler or retailer, sells at prices below those named in the "Protected List" he is put on the "Stop List" which means that no member of the Association can deal with him. This program has been so effective that the Association has had little trouble with price-cutting except by the large cooperative societies.[12]

The deferred rebate and the boycott are the usual weapons employed by an association to enforce its policies upon the trade. The former, which is "in extensive use in all branches of industry,"[13] confers a credit upon the "fair" dealer, which may be paid in cash at the end of stated periods or applied to the dealer's future purchases. It varies in amount from a small fraction to as much as 25% of the dealer's purchases. The trade boycott is equally prevalent in Great Britain. One of the few cases that have been submitted to the courts shows how onerous this form of restriction may become.[14] An association of London newspapers had entered into an agreement with certain distributing agents. To protect these agents from the competition of an independent dealer, the association declared a rigid boycott against the latter. The intent and actual effect of the boycott was to force retailers to confine their patronage to one small group of wholesale agents. Yet the court held, apparently without hesitation, that the boycotted dealer had no grounds for complaint.

[12] Other associations with similar policies are: The Motor Trade Association, The Grocers' Proprietary Articles Association, The Publishers' Association, The Tobacco Trade Association, The Stationers' Association, and The Cycle and Motorcycle Manufacturers' and Traders' Union.

[13] Committee on Trusts, *Report*, p. 27.

[14] *Sorrell* v. *Smith*, A. C., 1925, 700.

Control of Prices

Price-fixing has become a conventional feature of British trade practice. In fact, there are few associations that have not at some time or other in their history resorted to price fixing, although not always, of course, with success. Occasionally, one even finds an association frankly stating in its articles of association that it was formed "to maintain the minimum net prices and conditions at and upon which" its products were to be sold, as did the United Kingdom Soap Manufacturers' Association.[15] Of the many varieties of price control, by far the most common is the fixing of uniform mimimum prices, which simply sets the limits beyond which the competitive struggle cannot be carried. The so-called "open price" arrangements, which insist upon nothing more than full information relative to the prices actually being charged and which rely upon indirect pressure to maintain uniformity, have been in most cases too ineffective to be of much benefit. On the other hand, complete control through the fixing of actual prices has been too inflexible to be generally enforceable.

A fundamental issue of price control involves the bases upon which prices are to be fixed. In this connection it is significant that the procedure of most British associations is characterized by an almost total absence of objective standards. In most cases prices are determined by the crudest rule-of-thumb methods—merely after "a careful discussion of the whole position by those conversant with the circumstances," as the official of one association testified before the Balfour

[15] Committee on Trusts, *Report of the Sub-Committee on the Soap Industry*, p. 4.

Committee.[16] These methods stand out in marked contrast to the rigid formulae prescribed by the NRA codes.

The prevailing methods of price determination may be illustrated by citing the procedure of the National Sulphuric Acid Association.[17] This organization itself has never tried to control output directly, although some of the regional sections into which it is organized have occasionally, and for the most part unsuccessfully, attempted to enforce quota systems and to divide the market. Prices are also determined officially by the regional groups, although the central office makes recommendations and distributes statistical data and has, apparently, considerable influence *de facto* whatever its position *de jure* may be. Prices are determined simply by a general scrutiny of market conditions, past output, potential competition, the cost of production, and similar matters. Such weight is given to these factors as may seem desirable at the moment. The machinery is merely the conference table of each section, with periodic meetings of the sectional chairmen to secure uniformity. Haphazard as this procedure may seem, it has been effective in preventing ruinous price competition.

There are examples, it is true, of more decisive methods of price-fixing. Thus, in the rolled and re-rolled section of the steel industry the prices actually in effect when the plan went into operation in 1933 were accepted as the basic prices to which future prices were to be adjusted by uniformly adding or subtracting stipulated differentials as the price of steel billets rose or fell. The same device was used by the British Flint Glass Manufacturers' Association, which accepted the prices prevailing in 1915 when the Association was formed as the standard upon which future prices were to be based by a uniform increase or decrease. Attempts have also been made to adjust prices directly to the cost of production. Examples can be found in the salt industry, in certain processes in cotton finishing, in plate glass, in some sections of the iron and steel industry, and elsewhere. The cost may be a rough average for the industry as a whole which is agreed upon after a general discussion or computed from actual cost figures; it may be the cost of a single firm which has sufficient power to compel the acceptance of its prices; or it may be the highest cost prevailing in the industry. As a matter of fact, whether the cost of production is formally recognized to be the primary basis or not, it undoubtedly is the chief factor with associations other than those which are definitely aiming at monopolistic profits. Many officials of price-fixing associations freely admit that they must take care of the high-cost firms.

It should not be assumed that the fixing of minimum prices necessarily involves strong monopoly powers. The chief purpose is to avoid the losses of ruthless price competition rather than to reap the gains of monopolistic exploitation. The circumstance that has called most price associations into existence has almost invariably been an extended period of disastrous competition. As an ex-president of the Federation of Calico Printers testified before the Balfour Committee, "The formation of Calico Printers was an inevitable result of the operation of economic forces upon the printing trade generally," forces which, he said,

[16] Committee on Industry and Trade, *Minutes of Testimony*, unpublished mss.

[17] This information was supplied by officials of the Association.

had led to "excessive internal competition."[18] The Chairman of an important metal association has stated that his organization was formed only when "it was realized that if the industry was to be saved at all the manufacturers would have to come together and form an association," so that "by securing remunerative prices in the home market they could make a successful bid against foreign competition in the export trade."[19] Many statements to the same effect have been made to the author personally.

The Control of Output

The control of productive activity is a logical extension of restrictive policy beyond simple price-fixing and represents the final step in the suppression of competition. From the standpoint of underlying objectives, we should distinguish between two general types of output regulation. One involves the curtailment of output in order either to secure definitely monopolistic profits or to effect a closer "coordination" of output to the demand. The other is designed simply to prevent undue competition in securing orders and does so by distributing output among the various members. The former prevents the industry from expanding as a whole; the latter prevents an individual producer from expanding at the expense of his fellows. One requires the determination of the output of the entire industry; the other merely the relative position of each firm. Although this distinction may seem to be merely one of degree, it actually does represent an important difference in results.

No exact estimate can be made of the number of associations that attempt to operate the first type of restriction, the limitation of total output. At the time of the trust investigations, several articles were stated to be subject to some degree of curtailment, including salt, soap, lead oxide, electric lamps and certain other electric products, nails, cast iron pipe, and a few other iron and steel products.[20] At the present time, the composition of this list would be different, but the number of articles would probably be no greater. While the post-war depression has enlarged the number of associations and increased their general influence, at the same time it has prevented any material expansion in their restrictive policies over output. To an industry that has already suffered heavy losses in its markets, the rigid curtailment of output may merely add to its difficulties both by increasing its unit costs and by reducing its gross return.[21] Actually, few associations have possessed control over a sufficiently large proportion of the industry or enjoyed sufficient cooperation from their members, to make the curtailment of output possible. Neither have the markets of most industries been sufficiently stable to permit rigid control.

Those associations which do attempt to set limits to the total output of the industry employ a wide variety of methods. The favorite device is the conventional quota system, which involves the allocation of a definite

[18] Committee on Industry and Trade, *Minutes of Evidence*, unpublished mss.

[19] Committee on Trusts, *Report*, p. 7.

[20] Committee on Trusts, *Reports* of the various sub-committees.

[21] The disastrous experience of the Light Castings Association is a familiar story in British industry. This organization was formed in 1915 and immediately launched upon an aggressive program of restriction that is reported to have raised prices more than 25%. This policy proved suicidal, as it caused so many firms to withdraw that the entire program collapsed.

quantity of output to each producing unit and permits as severe a policy of curtailment as can be enforced. Another method is the uniform reduction in working hours, which was attempted in the cotton industry, although with little success because of the lack of adequate support. There are a few instances, chiefly in the steel industry, of the division of the market. Other associations have attempted to limit all increases in output during a given period to a stipulated percentage. There are some half-dozen instances of common selling, as, for example, in the benzol industry where the national association has persuaded all producers to market their product through a company created for this special purpose.

One of the most successful of these highly restrictive groups is the Electric Lamp Manufacturers' Association of Great Britain, whose activities in controlling dealers have already been mentioned. This association is generally assumed to be one of the most powerful monopolies in British industry. Controlling as it does from 90% to 95% of the British output, it has reduced competition to the vanishing point. The restriction of output is effected through an elaborate patent licensing system which operates virtually as a patent pool. Patents are largely owned by three firms, which grant licenses to other members of the Association. The licensees must agree not to increase their output more than a certain percentage each year. This percentage is changed from time to time in accordance with economic conditions, but is usually either 5% or 10%. The licensees must also agree not to question the validity of the patents. The Trust Committee investigating this organization believed that its primary purpose was to enable the large patent holding firms to compel the acceptance by the industry of their policies of limitation of output and non-questioning of patents.[22]

Instead of definitely curtailing output, most associations have adopted measures which express the quota for each producer as a percentage of the total output of the industry rather than as an absolute quantity. A typical illustration is afforded by one of the important steel associations. When this association was formed, each firm was awarded a definite percentage of the total quantity to be produced. At the end of each month the secretary receives from each firm particulars of its output during the month. From these data the total output of the industry and the percentage therein of each firm are ascertained. It then is possible to determine how much each member has exceeded or fallen short of his official allocation. Those firms that exceed their alloted percentage are fined £1 per ton, while those that fall short are reimbursed 10s. per ton. The total output of the industry is not curbed but is free to expand or contract as fluctuations in the demand may require.

The system of penalties and bonuses is an important feature of these schemes. It operates something like a money pool, as the amount collected in penalties will usually be equivalent to the amount disbursed in bonuses. The payments may be expressed as a lump sum per unit of output as in the case just cited, or as a percentage of sales as in the Light Castings Association, which fixed its fines and bonuses at 7.5% of gross sales. Whatever the

[22] Committee on Trusts, *Findings and Decision of a Sub-Committee Appointed to Enquire into the Existence of any Trust or Combination in the Electric Lamp Industry*, p. 15.

method of calculation, they are usually adjusted as closely as possible to the average rate of profits in the industry. This is supposed to encourage the diversion of output to the more efficient producers. For, even though penalized, a firm will still have an incentive to exceed its quota if its costs are less than those of its fellow producers, as it will derive some profit even on that part of its output which is penalized. On the other hand, a firm whose profits are lower than the average will secure a larger income from its bonuses than from its production. Although obviously there are many obstacles to the smooth operation of this process, it presents an ingenious application of the mechanism of control.[23]

Special application of the quota system is used by those industries which sell a considerable portion of their output on public contracts. Some of these devices are very elaborate, although few make a definite attempt to curtail output, as the chief aim is merely to prevent competition in seeking orders. Some form of collusive bidding is usually employed, whereby tenders are so arranged that a given contract will be awarded to the firm that needs additional work to bring its actual output into line with its allotted quota.

A good example of this type of association is furnished by the Cable Makers' Association, whose program lies midway between mere price-fixing and the definite limitation of output.[24] Each member is given a definite percentage of the total output of the industry. The usual penalties and bonuses are provided and are based on the average rate of profits in the industry, although their exact amounts are not made public. Tenders are in most cases arranged by the Director's office in order that contracts will be awarded in harmony with the official quotas. It is not unusual, when legally possible, for an order to be sent directly to the office of the Association rather than to the producing firm. It is also freely admitted that the Association is willing to adjust its bids so that a purchaser will be able to secure the product of a desired manufacturer.

Certain associations have made an altogether different approach to the regulation of output by reducing the volume of producing facilities. Here again the purpose is not so much to extort monopolistic profits as to eliminate a particularly vicious source of competition. The author has already discussed this movement in an earlier article in this journal[25] and will merely call attention to it here. Suffice it to say that an essential prerequisite to the successful reorganization of British industry has seemed to be the elimination of the large excess of productive capacity and that in many industries it is the trade association that has assumed direct responsibility for this work. It is an important feature of the activities of the Millers' Mutual Association in flour milling, of the large sectional associations authorized by the reorganization scheme in iron and steel, of certain of the large regional groups in coal mining, of the spinning associations in cotton textiles, and of many smaller organizations such as the Sul-

[23] The Committee on Trusts stated that "We were informed that . . . the arrangement made for efficiency. For the inefficient man who could not make a profit equal to the compensation preferred to let his business go to the more efficient firm and draw from the pool." The Committee mentions the case of a firm that had entirely ceased to manufacture, securing a "handsome income" instead from its bonuses. *Ibid.*, *Report*, p. 4.

[24] Most of the following information on this organization was furnished by the Director of the Association.

[25] XII HARVARD BUSINESS REVIEW 4, July, 1934, p. 389.

phuric Acid Association. It represents a significant culmination of the movement toward industrial control.[26]

Conclusion

The foregoing account indicates the prevalence of restrictive associations in British industry and the nature of their policies. While space does not permit a detailed evaluation of their operation, it is possible to draw certain general conclusions. In the first place, no one could come into direct contact with the members of these organizations without being impressed by the strong faith in British industry in the advantages of control. Certainly, the relief from severe internal competition has been very welcome. Furthermore, there is little evidence that serious abuses have occurred. The Committee on Trusts investigated nearly fifty restrictive groups and openly condemned not more than half a dozen. Its report stated that "no definite evidence was brought before us that up to the present excessive charges have been made."[27] Neither the Balfour Committee reporting in 1929 nor a committee of the Board of Trade reporting in 1931 felt that governmental interference was necessary. It is true that isolated complaints have been heard of the Sulphuric Acid Association, of the Sulphate of Ammonia Federation, of the price rings in textile finishing, and of a few other associations. By and large, however, the British public is apparently quite willing to endure the few inevitable instances of unreasonable prices provided the movement as a whole gives evidence of making a real contribution to recovery.

As to the methods of determining prices and regulating output, however, the picture is distinctly unfavorable. We have not been able to examine the prices actually in force, but we have seen that no standard exists for their proper determination. This applies not only to the general level of prices but to individual prices as well. It is obvious that in every large industry innumerable questions of specific prices arise which are not only exceedingly complex at best, but which also arouse many sharply conflicting interests within the industry. So long as control is left to industry itself, the answers to these issues of price policy must receive nearly unanimous support. Otherwise compliance simply will not be forthcoming. But this means that action is possible at all only by a continuous succession of compromises, which not only detract from the general effectiveness of control, but frequently, also, lead to highly improper results.[28]

The procedure in controlling output is even more dubious. To coordinate output closely to the demand is a hopeless undertaking. Few associations have made the attempt and those with sufficient ambition to do so have met with little success. Only when the market is unmistakably overburdened with unsalable goods can curtailment be instituted with assurance that it will bring output more nearly into line with the demand. This is most likely to be true, however, in a period of severe depression—the very time when an increase in prices will react ad-

[26] Many other measures of control are, of course, to be found in British industry. The outright pooling of profits is not common, although a few examples can be found, most of which are in iron and steel. Certain associations deliberately add a "monopoly differential" to their bids when making public tenders. Cooperative action in the export trade is not uncommon. The genuine cartel, however, is a rarity.

[27] Committee on Trusts, *Report*, p. 5.

[28] For further discussion of the difficulties of price control, see my article in the *Quarterly Journal of Economics* for February, 1935, pp. 218–221.

versely upon the volume of sales and thus upon unit costs. Actually, control has done little more than to distribute the available output among individual producers. But, as in the case of prices, there is no sound basis upon which the arbitrary determination of the output of each firm can be made. Of necessity most associations have adopted past output as the only available basis. This, however, has led to serious injury to many progressive firms and at the same time has given to other firms a status in the industry to which their economic and technical position has not entitled them. In extreme cases, in fact, the chief effect of control has been to compel the efficient firms to contribute to the support of the inefficient.

An inherent defect of the association is its perpetuation of individual financial interests, which renders the distribution of the benefits of control in proportion to the burdens a near impossibility. This is another reason why most associations have been forced to impose relatively mild restrictions. The rigid combine is distinctly superior in this respect. It does not need to consider the effects of its policies upon many separate firms nor is it faced with the danger of wholesale non-compliance. British experience would seem to indicate, therefore, that control as a permanent feature of our industrial organization is faced with the following dilemma: either it must be content with a mild degree of restrictiveness; or else it must assume a stronger and more closely unified form of organization than the association, in which case it would constitute a serious threat to the public interest and at the very least would necessitate the strictest form of governmental supervision.

EFFECTS OF AAA ON TOBACCO PRODUCTION

By W. W. GRAVES, JR.

AS is well known, the Agricultural Adjustment Act was designed to restore the purchasing power of farmers and to adjust the production with the consumption of farm products. The former objective was to be solved by the restoration of relative price levels which had existed in certain base periods. The latter objective was to be achieved with the aid of certain laws and with the use of adjustment payments for land kept out of production.

Tobacco, although produced on the continent before the white man arrived and, indeed, the chief agricultural crop of early America, did not reach a mature stage of production until the World War. Its base period, therefore, is a later period than that of any other commodity, to wit: August, 1919–July, 1929; as against the August, 1909–July, 1914, base period for all other commodities.[1]

Type	Uses	Where Grown	Size of 1933 Crop (Million Pounds)
Flue-cured	30% in cigarettes 12% in smoking and chewing tobacco 52% exported	Southern Virginia Piedmont and eastern North Carolina Eastern South Carolina Georgia	737.7
Burley	50% in cigarettes 46% in smoking and chewing mixtures 4% exported	Southern Ohio Kentucky Central and eastern Tennessee	382.0
Maryland	45% in cigarettes 55% exported	Southern Maryland	20.4
Cigar-leaf	55% in cigars 45% in scrap and chewing tobacco	Connecticut Valley Parts of Pennsylvania, New York, Wisconsin, Minnesota, and Florida The Miami Valley (Ohio and Indiana)	150.0
Fire-cured	26% in snuff 3% in cigars 71% exported	Central Virginia Western Kentucky	138.0
Dark air-cured	70% in chewing and smoking tobacco 30% exported	Central Virginia Western Kentucky	90.0

Several different types of tobacco are grown in the United States. The divisions of the types listed above are recognized by the AAA for purposes of

[1] Unless otherwise stated, all information in this report was taken from official publications of the U. S. Department of Agriculture and its divisions.

administering the Act. The different uses and the localized production of each type serve to show the impossibility of any comprehensive tobacco program.

Furthermore, each division is made up of many different grades and types, all of which helped to make impossible any comprehensive program the AAA could devise for tobacco. This report, therefore, discusses separately the effects of the different AAA plans, which vary with the divisions of the types of tobacco produced.

General Characteristics of Tobacco

In spite of the various divisions, many characteristics are common to all types of tobacco and its production. Tobacco is the most intensive crop for which production-adjustment programs are offered. It is grown in small areas on approximately 400,000 farms. It requires approximately 300 hours of labor to prepare, grow, and harvest one acre of tobacco for the market, or from 3 to 20 times the amount of labor required for other major crops. Tobacco production, therefore, can easily be expanded or contracted; its consumption in finished products, however, constitutes a relatively inelastic demand.

All tobacco is "aged" by the tobacco manufacturers from two to three years before being made into finished products. This feature causes a huge supply to be ever-present on the market. However, in addition to these huge normal supplies, the AAA in the summer of 1933 found stocks of cigar leaf, which had accumulated during the depression period, sufficient to last an additional year and six months; of flue-cured, three months; of Maryland, one year and six months; of Burley, one year and five months; of dark air-cured, eight months; and of fire-cured, nine months. These additional stocks meant that in the cases of Burley, Maryland, and cigar-leaf tobaccos, even by eliminating an entire crop, there would still have been more than the huge normal supply remaining. In the case of the other types, a large part of one annual crop could have been eliminated. Considering all types and grades as a unit, only one-fourth of a crop was needed to bring stocks to an average relationship with consumption.

The AAA also found the tobacco growers as a whole in an acute situation. The gross revenue of the tobacco farmers had equaled $286,000,000 in 1929, $211,000,000 in 1930, $129,000,000 in 1931, and only $105,000,000 in 1932. This great gross decline occurred in spite of larger poundage (except in 1932), in spite of yearly consumption figures only a very small percentage below the 1929 level, in spite of net profits of the combined large domestic tobacco companies being greater in each year than in 1929, and in spite of a higher wholesale price for leading brands of cigarettes at the end of the period than in 1929. Obviously this situation represented a terrific maladjustment. Exports had declined during the period, and this fact, along with business conditions, helps explain part of the great decline.

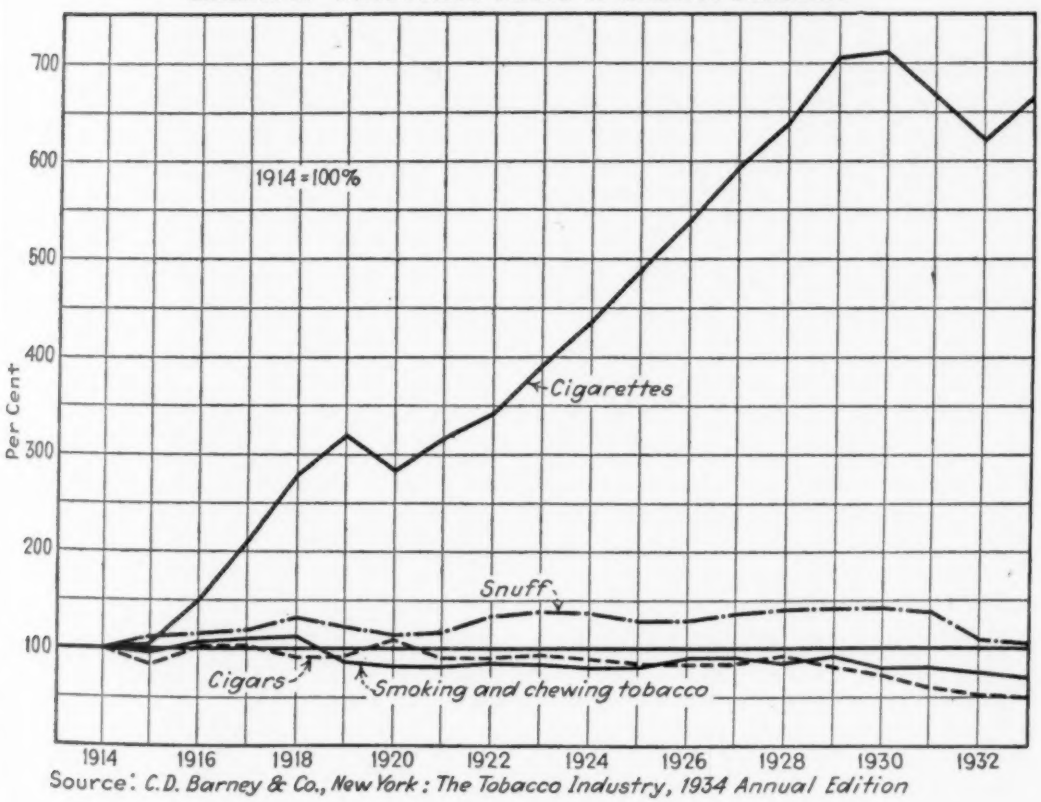
These price and supply maladjustments of tobacco production were more of a short-run problem, and an adjustment of them could be expected to have rather immediate effects. There were other problems, however, which faced the growers and these were of a long-run nature. The great shift in consumer demand towards the cigarette had already brought great changes in the types of tobacco produced. This cigarette demand had increased steadily while the demand of other tobacco

products had remained fairly steady or had declined. The other major trend was the steady decline since 1929 of our exports—a very serious problem, since almost half of our total tobacco production had been exported in each year from 1909 through 1929. This export decline was caused by the unfavorable exchange rate which the currencies of most countries held with respect to the dollar during the 1929–1933 period, the general world business conditions, and, more important than all, the "nationalist" movements in the countries which were large importers of our tobacco. The AAA, therefore, had to consider the shifts these two important long-run trends were causing in the demand for the different types of tobacco. From Exhibits I and II the effect of the cigarette's phenomenal rise in popularity is shown directly and as reflected in the increased production of the flue-cured and Burley types.

Kerr-Smith Tobacco Act

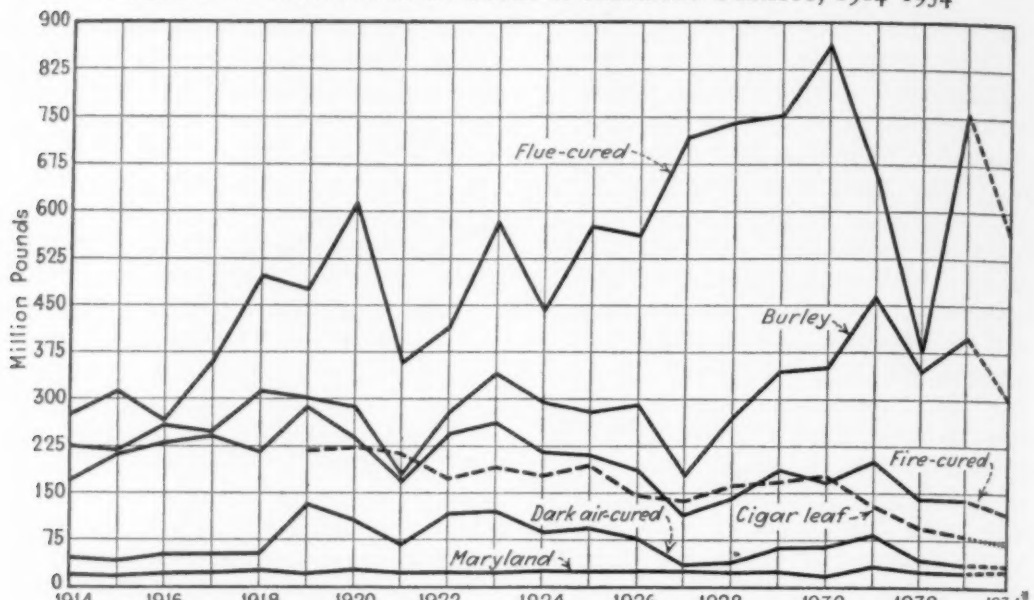
The law which was to aid in the enforcement of the restriction of tobacco production was passed June 28, 1934; it is known as the Kerr-Smith Tobacco Act. The act did not seek to compel cooperation in reduction programs but permits non-cooperators to grow tobacco and taxes them an amount equal to the excess of their sales income above what they would have received for the same number of pounds of tobacco if no program had been offered.

EXHIBIT I. PRODUCTION TREND OF TOBACCO PRODUCTS



Source: C.D. Barney & Co., New York: The Tobacco Industry, 1934 Annual Edition

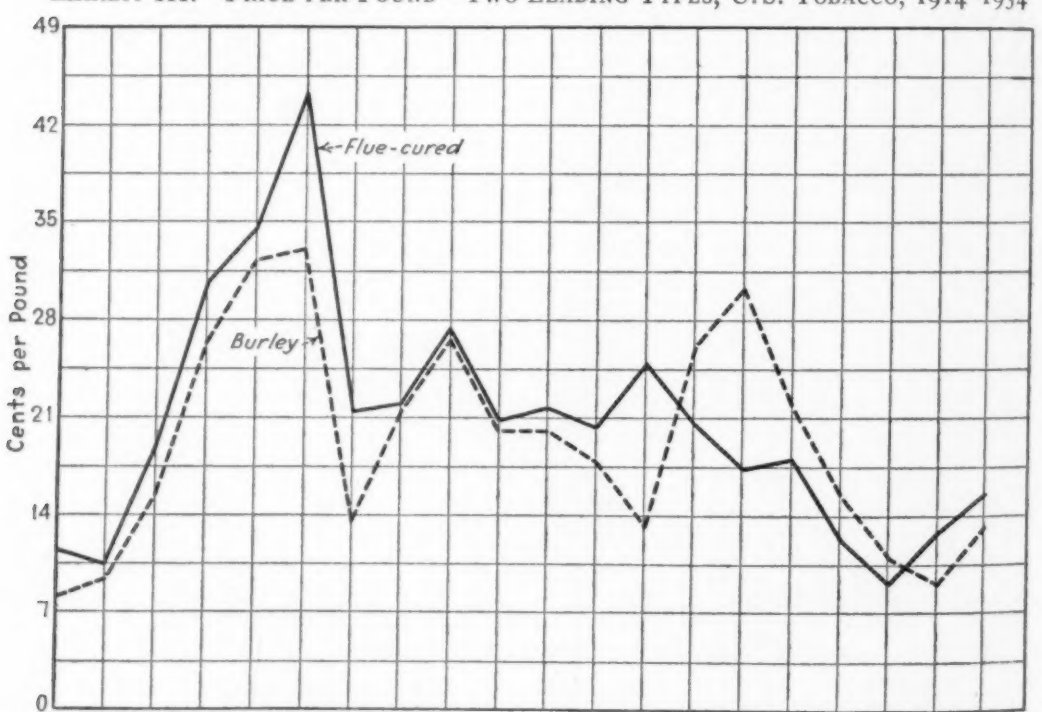
EXHIBIT II. PRODUCTION BY TYPES OF AMERICAN TOBACCO, 1914–1934



Source: U.S. Department of Agriculture, circular No. 249, American Tobacco Types and Markets

*1934 figures from estimates

EXHIBIT III. PRICE PER POUND—TWO LEADING TYPES, U.S. TOBACCO, 1914–1934



Source: U.S. Department of Agriculture, circular No. 249, American Tobacco Types and Markets

All previous cooperative programs had failed because growers outside the agreement had taken advantage of those who made the reductions. This bill places an *ad valorem* tax of not less than 25% or more than 33⅓% on all tobacco. Tax-free warrants are given cooperating producers for an amount equal to their allotment. The cooperating producers are those who voluntarily signed contracts during 1933 agreeing to reduce the size of their 1934 crop and, at the option of the Secretary of Agriculture, their 1935 crop. The act also re-opened the voluntary programs for a period of thirty days following its enactment, thereby allowing all growers the privilege of becoming cooperating producers and thus securing tax-free warrants.

Flue-cured Tobacco—Price and Supply

As was seen in Exhibit II, showing production of tobacco by types, the flue-cured type of tobacco has become by far the most important in point of size of production. It is the most popular major type of tobacco grown anywhere in the world. Exhibit III shows the prices per pound which have been received by the flue-cured growers.

From Exhibit II it can be seen that the 1933 flue-cured crop was one of the heaviest on record. It was in that year that the AAA first started operating. In July, 1933, the estimate of the flue-cured crop was placed at 591,000,000 pounds. On the strength of this low estimate, the early sales on the Georgia markets (which opened the latter part of July) commanded a fair average of around 14 cents per pound. When it became apparent that the crop was heavier than estimated, the price fell. The South Carolina, or "border," markets opened during the first part of August, and the large Eastern Carolina, or "bright belt," markets opened during the last week in August. Prices were very low (around 10 cents per pound), because it was seen that favorable weather conditions had made the crop one of the heaviest on record.

One week after the Eastern Carolina markets opened, the Governors of North Carolina and South Carolina declared a tobacco marketing holiday. At this point the AAA, aided by leading farmers, warehousemen, and others, canvassed all growers and received a written agreement from 95% of them to reduce 1934 acreage by 30%. In return for these "rented acres" farmers were to receive a flat rental of $17.50 per acre plus 12½% of the net market value of the tobacco produced under the contract, which was to be 70% of the production of the period used by the farmers as a base period. Several alternatives for a base period and special agreements for producers of less than four acres were made so as to enable all growers to obtain equitable adjustments. The money to pay these benefits was to be raised by processing taxes to be collected from the manufacturer. The tax was set at 4.2 cents per pound for flue-cured tobacco. This amounts to about one-fourth cent per pack of cigarettes. The revenues from the processing taxes for all types of tobacco were estimated to exceed adjustment payments by $8,000,000, so there would be no drain on the U. S. Treasury.

Armed with these contracts to reduce the 1934 crop by an amount approximately as much below 1934's estimated world consumption of flue-cured tobacco as the 1933 crop exceeded 1933's estimated world consumption, the AAA approached the large buyers. The AAA sought a promise from these

buyers, in consideration of the 1934 reduction, to purchase amounts equal to their past average annual needs at prices averaging 17 cents per pound, the price necessary to reach the parity point. Although this agreement was not finally signed until mid-October, the markets re-opened on September 25, 1933. Equalizing payments of 12½% or 20% were made to the farmers who had sold their tobacco before the marketing agreement was signed. The varying payments depended on the date on which the tobacco was sold.

The big domestic buyers signed and carried out their agreement. The foreign buyers (60% of the flue-cured is usually exported) cooperated with the movement because of the prospect of balancing the production with consumption in 1934 and because the dollar devaluation which was taking place strengthened their position.

As a result, the whole flue-cured crop averaged 15.3 cents per pound, or approximately 4.3 cents per pound more than normal supply-demand relationships indicated as a "fair" price for the crop of 737,700,000 pounds. This rise meant $30,000,000 additional for the flue-cured growers and gave the 1933 flue-cured crop more purchasing power than any flue-cured crop since 1919. The flue-cured growers received $179,000,000 for this 1933 crop and, in addition, adjustment payments (for the 1934 reduction) of $28,000,000, making a total of $207,000,000 for the 1933 crop; as against $107,000,000 received for the 1932 crop.

In 1934, the farmers kept faith and reduced their crop as they had agreed. The weather conditions made the prospects for the 1934 crop less than expected, however, so the AAA allowed an 80% crop to those who desired it with a corresponding reduction in their adjustment payments. When the last flue-cured market closed on February 2, 1935, 557,159,606 pounds of the 1934 crop had been sold at an average price of 27 cents per pound. In other words, the price per pound was almost double that of the previous year, although the crop was only about 25% less; this reduction was paid for by adjustment payments. The AAA has thus been able to improve the position of the flue-cured growers even beyond the "parity" point they set as the goal.

The AAA has, therefore, in one year effectively led the flue-cured growers in a campaign to reduce production to a point which wiped out the surplus hanging over the market, and to raise prices to a satisfactory point. The success of this program to raise prices can be attributed to several causes, the most important being the increasing popularity of the cigarette in the United States and in England, increased world consumption, reduced crops in Canada, favorable exchange rates, the desire of the 15-cent cigarette manufacturers to force prices above the point at which the 10-cent cigarette manufacturers could buy, and the great cooperation given by the growers. Also the flue-cured tobacco of the United States is, as was stated, the most popular type in the world. Our climate, soil, and knowledge allow us to raise tobacco of a higher quality than any other country. The smokers of the importing countries are accustomed to it and will not change immediately to other blends.

Flue-cured Tobacco—Exports and Cigarette Consumption

The two short-run problems, price and supply, were, therefore, adjusted in one year by the farmers with the help of the AAA. But the two long-run

problems must be solved if the industry is to continue to prosper.

By far the most important problem is the decline in exports. Only 43% of the 1931–1932 flue-cured crop was exported, and the percentage dropped again in 1932–1933, while the average for the past several years was near 60%. Exports in 1933–1934 were 22% greater than those of 1932–1933. Exports of last year's crop are running relatively larger than in 1933 and approach the average export percentage figure of the flue-cured crop, although total poundage is somewhat less.

An analysis of the countries importing U.S. flue-cured tobacco shows Great Britain, China, Japan, Germany, Australia, and Canada taking practically all of it. Great Britain has long favored Empire-grown tobacco with a high preferential import duty. British tobacco manufacturers have long tried to "switch" the English smokers to blends containing more Empire-grown tobacco. Last year, however, the Canadian crop was short, and cigarette consumption in England started to climb after a protracted decline. These factors forced the British manufacturers into the U.S. flue-cured market for more of their annual supply. The present favorable exchange rate also allows them to pay higher prices for our tobacco.

China has long been gradually increasing its production of flue-cured tobacco. Its imports during the depression have been declining consistently and declined even further last year. Formerly China's imports were equal to about 15% of our total flue-cured crop. Undoubtedly the price set by our government on silver should help bring China back into its "normal" place as an importer of U.S. flue-cured tobacco, provided the price of our tobacco is not on a high artificial level.

Japan has a state monopoly in tobacco, and its flue-cured growers have increased their production greatly under a government subsidy. Canada imposes a 40 cents per pound excise tax on our tobacco, and Australia's production of tobacco has increased greatly since 1929 when that country imposed a very heavy tax on imported cigarette tobacco. Germany's nationalist movement has led to greatly increased production in that country, and its present export condition makes imports a problem.

In spite of these unfavorable trends, a considerable market for U. S. tobacco still exists, as these replacements are very gradual. The quality of our flue-cured tobacco will always hold a place for it in exports, but the AAA should plan to keep as large a part of the market as possible. Artificial restriction to keep up the price will lead to a complete destruction of the major part of our flue-cured export markets. The AAA was extremely lucky in having the shortage in Canada, the silver-purchase effects in China, and the cheapened dollar to help increase exports this year. The dollar, however, may seek another level in relation to the other currencies, and its present position cannot always be depended upon to aid the tobacco program.

Increasing cigarette consumption in the United States and in England places flue-cured tobacco in a strong position. In order to keep this long-time trend acting to the advantage of the flue-cured growers, restriction must not be continued for too long a period.

The AAA recognizes these problems and is considering a 100,000,000-pound increase in this year's crop. This will represent a reduction of about 10%

from the base. It is believed by the AAA that increased world consumption this year will care for this extra amount and that surplus stocks will not result. The advisability of any further restriction is very questionable. As has been stated, the conditions of last year, especially in England and China, were ideal and enabled the AAA's plan to solve the price and supply problems. Further artificial restrictions will spur production in other countries, and, once displaced, the United States will have a hard time regaining its market. Our soil, climate, and knowledge will not be enough to outweigh the lower prices of the other producing countries, if we burden our natural advantages with artificial prices.

Burley Tobacco

Burley type tobacco, grown chiefly in Kentucky, Tennessee, Ohio, and Virginia, is second to flue-cured in total size, having totaled 382,000,000 pounds in 1933 as compared with a flue-cured crop of 737,700,000 pounds. It differs radically from flue-cured in that it is practically all used in the United States. About 50% goes into cigarettes; the balance, with the exception of 4% which is exported, goes into snuff and other manufactured tobacco products.

Exhibit III above shows the great price declines which have taken place in Burley. Very great surpluses had caused these declines; accordingly, before the 1933 markets opened in December the AAA drew up a plan to reduce these surpluses. The stocks had increased from 332,000,000 pounds in 1929 to 616,000,000 pounds in 1933, so that very drastic reduction was necessary. The plan adopted called for a reduction of either 50% or 33⅓%, depending on the choice of the grower. Twenty dollars was paid for each "rented acre." Those who cut acreage by 33⅓% were to receive one payment of 10% and another of not less than 15% of the net value of the reduced 1934 crop. Those who cut acreage 50% were to receive a first payment of 15% and a second of not less than 35% of the net value of their reduced 1934 crop. Any deficiency below the allotment was to be evened by a payment of 2 cents for each pound. These payments were to be financed by a processing tax of 2 cents on each pound of Burley. This tax was later raised to 6.1 cents in order to secure satisfactory prices and sufficient funds.

Ten domestic companies, which use approximately 90% of the Burley crop, in consideration of the 1934 reduction, agreed to purchase an amount of the 1933 crop at least equal to their past 12 months' consumption at an average price of 12 cents per pound. As a result the 1933 crop, in spite of the great surpluses, averaged 12.9 cents per pound, as compared with averages of the preceding two years of around 9 cents per pound.

The actual Burley crop in 1934 was about 245,800,000 pounds (estimated by the Department of Agriculture after 85% of the crop was sold). The average price per pound (estimated at the same time as the poundage) was close to 16.9 cents. The AAA's plan thus has also resulted in a substantial rise in the income of the Burley growers.

The AAA's effect on Burley production has paralleled the effects on many other crops and industries. A quick adjustment of production to consumption was carried out with a resulting rise in prices. The plan will work towards subsidizing the producers, who would otherwise be forced out by the low prices and their individual high

costs. It is a case of keeping all producers on an individually reduced production scale, as against fewer producers with resulting reductions in the total crop. Because the adjustment was effected in a short time, the plan was probably justified. Its continuance, however, will continue to penalize the most efficient producers. However, since Burley is not exported to any great extent, the growers as a whole have nothing to lose and, as long as other tobacco types are restricted, the Burley plan of subsidizing all growers is perhaps preferable for a longer time than would be justified in other cases.

Maryland Tobacco

Maryland type tobacco is grown in a small area in southern Maryland. Exports always take a large part of the crop, with France, the Netherlands, and Belgium taking by far the largest amounts. Exports during the depression dropped greatly, and stocks rose proportionately.

The importing countries charge high excise duties on this tobacco and foster home production of it. These countries raise tobacco of low grade, so that the Maryland stocks increased mainly because of the inability to sell the low grades. All these countries tax tobacco products very heavily, so that only the best grades of Maryland are in a favorable position.

The AAA urged the Maryland growers to concentrate on quality tobacco as their best chance to keep their markets. Improving business conditions and the favorable exchange rates in the importing countries stimulated Maryland exports in 1933. The AAA thus thought it best not to restrict our production, which would raise the price and destroy the only hope to reduce the Maryland tobacco surplus. Nevertheless, the AAA offered a $20 per acre rental payment and 25% of the net value of the 1934 crop to any grower who reduced production by 25%. This offer, however, was limited to the payments which could be made from a fund raised by a processing tax on the Maryland tobacco used domestically, or about $140,000.

As a result, the 1933 price was somewhat better. The 1934 crop was larger than the 1933 crop, but the ability to sell favorably to the importing countries and the rising consumption in this country should keep the price at least as high as it was in 1933 and reduce stocks somewhat.

Cigar-leaf Tobacco

Because production adjustment was needed more and because prices were relatively lower in the cigar-leaf than in any other type of tobacco, the AAA in the summer of 1933 turned its first attention to the cigar-leaf problem. Cigar-leaf is of three main types—filler, binder, and wrapper—and is grown in widely scattered districts of the United States. It is consumed almost entirely in the United States, about 55% going into cigars and the balance into scrap chewing tobacco. The great decline in the sales of these two products had caused an enormous surplus of cigar-leaf to be hanging over the market in the summer of 1933. The growers were widely scattered, and coordination between them was necessary if any solution of the supply situation was to be successful.

Because of the varying yields per acre and the different grades grown as between districts, the AAA divided the filler and binder type producers into the following groups:

New England
Pennsylvania-New York
Miami Valley
Wisconsin-Minnesota

It was not too late for the AAA to have part of the 1933 crop taken from production. Accordingly, the Secretary of Agriculture placed a 3-cent per pound processing tax on these cigar types of tobacco and offered $47 per acre to New England growers, $24 to Pennsylvania-New York growers, $15 to Miami Valley growers, and $20 to Wisconsin-Minnesota growers, if production were reduced by 50%; or about 20% of an assumed exchange value for each acre of average production in each district. A second adjustment payment of 40% of the average market value of each retired acre of the tobacco harvested in 1933 was to be made. The contracts gave the Secretary the privilege of extending the reduction into 1934 and/or 1935. Because the 1933 crop of many growers was already cut below their base, the total reduction was about 32%.

The 1934 crop, with 92% of the growers under signed contract, was the smallest on record. Many growers produced no tobacco at all, in which cases minimum payments were provided. The five-year surplus is still very large, and a 1935 crop not to exceed the small 1934 crop will probably be decided upon by the AAA. In view of the very serious plight of the industry, the AAA plan for cigar fillers and binders was probably very wise. The growers were widely scattered and, without some such agency as the AAA, would probably have prolonged indefinitely the great maladjustment. As in the Burley program, the inefficient growers are allowed to survive, but over a short period this seems a very wise policy. The processing tax, however, is hurting the already sick cigar industry, and should be removed as soon as possible.

The wrapper types of cigar tobacco are grown in the Connecticut Valley and in the Georgia-Florida district. In the Connecticut Valley there are only a few growers, and the value of the tobacco per acre is very high. The Secretary of Agriculture, therefore, entered into a marketing agreement with 93% of the growers, whereby he will aid them in enforcing production limits set each year by the growers themselves with respect to the existing demand. This program should work if the contracting growers can prevent others from increasing their production, and it should also help adjust the demand-supply relationship without jeopardizing the place of this type of cigar-leaf in the market.

The Georgia-Florida district was faced with a large oversupply problem. The AAA contracted with them to leave the low-grade portion of their 1933 crop in the field, which action reduced that crop by 23%. AAA control of 1934 and 1935 crops is to adjust the production to consumption and is to be paid by the processing tax proceeds.

Fire-cured Tobacco

The fire-cured tobacco crop, which is raised in Kentucky, Tennessee, and Virginia, represents between 10% and 15% of total U. S. tobacco production. Before the depression, about two-thirds of it was exported, mainly to France, Italy, Czechoslovakia, Poland, Spain, Germany, and England. The tobacco monopolies, the rising home production, high import duties, and declining general business conditions cut the exports by more than half. Domestic consumption, mostly snuff, has declined 10% during the depression.

The AAA offered a plan similar to the flue-cured program, differing only in amounts paid, to get growers to reduce acreage by 25%. A processing tax of 2.9 cents per pound was levied on the part used in this country. Domestic companies agreed to pay an average of 11 cents for the 1933 crop; this price represented a good increase over previous prices.

The effects on supply and demand relationships have raised prices. The restriction has served to quicken a reduction which was inevitable and which was already gradually occurring. Unless foreign production is speeded up because of the program, there should be no lasting bad effects resulting from a short-time use of the plan, but the effects of a long-time continuance of the policy will wreck the remaining export market.

Dark Air-cured Tobacco

Dark air-cured tobacco represents less than 5% of the total tobacco production of the United States. Formerly one-half of it was exported, but recently this export ratio has dropped to less than one-third of the total crop. This type is used principally in chewing tobacco, and consumption of this product has declined 40% during the last ten years. Prices declined from 10.8 cents per pound in 1928 to 3.5 cents per pound in 1931 and were only 4.1 cents per pound in 1932.

The AAA adopted a plan similar to the flue-cured plan and adjusted it to the dark air-cured needs. Marketing agreements, in lieu of the contracted 1934 reduction of 30%, were received from buyers, and the 1933 crop brought growers almost twice the income of the 1932 crop. The 1934 reduction was designed to remove considerable surplus from the market, but actually excellent weather conditions increased the size of the crop above the 1933 crop.

Just as in the case of the flue-cured and fire-cured plans, this plan places the foreign export markets in jeopardy and gives the exporting countries more incentive to foster their monopolies further. The short-run effects of the plan have been successful, but consideration should now be given the long-time effects which will result if the plan is kept.

Conclusions

Without question the plight of tobacco producers in the summer of 1933 was serious. Surplus stocks hung as a threat over the market. Production of the U.S. tobacco crop as a whole was clearly out of line with consumption. The decrease of gross receipts to farmers had dropped between 1923 and 1932 from $288,000,000 to $107,000,000, while net profits of tobacco manufacturers during the same period increased from $76,000,000 to $146,000,000. This was obviously a great maladjustment which required immediate attention. The AAA programs were, without question, a large factor in materially increasing returns received on the whole 1933 and 1934 tobacco crops.

But is it wise to continue the program? In the case of the tobaccos that are largely exported—flue-cured, Maryland, fire-cured, and dark air-cured—the continued artificial restrictions will hold United States prices above world prices and thus destroy our export trade. Other temporary factors have materially helped prices, but these factors cannot always continue to be favorable to us. The AAA's announced intention of considering an increased flue-cured crop

for 1935 shows that the officials realize the danger and are preparing to try to avoid it. Surely it will be better for the AAA to let the plan be remembered as a great success, which it has been in the short run, than to have it entirely destroy our export markets with its long-run effects.

The Burley and cigar-leaf producers as a whole do not face the same grave dangers. However, the part of the processing tax which is not passed back to them in the form of lower prices is either absorbed by the manufacturers or paid by the consumers. In either case the net result is to decrease the total consumption. The sooner restrictions are lifted, the sooner these types of tobaccos will be able to compete more successfully with other types and the sooner the full consumption can be obtained.

Even in its short-run effects the plan has been of greatest benefit to growers of those tobaccos which were in the strongest competitive positions, particularly the flue-cured growers. Only a restoration of full competitive status, as soon as practical, will bring the greatest returns to the growers over a long period. Surely a successful short-run plan is better than a long-run disaster—unless America chooses complete nationalism.

CAN RUBBER RESTRICTION SUCCEED?

By JOHN K. CHISHOLM

THE past ten years have witnessed attempts to stabilize prices of such raw materials as copper, sugar, silk, and coffee with little success. The International Zinc Cartel was dissolved on January 1, 1935. Although three previous attempts to stabilize prices of crude rubber have been unsuccessful, the continued efforts which have been made to solve the problem bear eloquent testimony as to its importance.

On June 1, 1934, a new plan for the restriction of rubber for price stabilization purposes was adopted by the rubber producing countries of the world, after many months of negotiation. The success or failure of this plan will be extremely important to both producers and consumers. Whether the present plan is any better than its predecessors is a current and very interesting question.

There are two distinct schools of thought on the subject of price stabilization; that which holds that in spite of repeated failures of such plans, each new one is a panacea for its industry, and that which holds that such attempts are foredoomed to failure.

Conditions in the Industry

It should be recognized that each industry has problems peculiar to itself and is affected in a different manner by problems of production and distribution. Reasons for failure of past plans for other commodities do not necessarily apply to rubber. Agricultural and mining industries have a different set of obstacles to overcome. Yearly crops present problems dissimilar to those of long-time, large-scale rotations. No set of standards can be set up which will apply to all industries, and the fact that past attempts to stabilize prices have failed is no reason to dismiss the present rubber plan without examining its possibilities. Results of past plans and the causes therefor must be considered in an appraisal of present plans.

To illustrate the differences in the problems confronting the various industries, let us consider the case of tin as compared with rubber. In the tin industry, as in rubber, the first attempt to control production was a voluntary one. A group of small producers pooled their holdings and worked only the more accessible mines, in an effort to cut down the costs of production. This plan helped a little but not enough to influence greatly the price of tin in world markets. It was necessary to have some form of international agreement, because tin is produced in British Malaya, the Dutch East Indies, and Bolivia. Each country had a different problem; in Malaya it was one of cooperation of many small producers, in the Dutch East Indies it was a problem of government control, and in Bolivia it was a question of importance of tin as a source of government revenue. In 1931 an international agreement was signed, which succeeded in raising the price of tin from £122 per ton in March, 1931, to £234 in June, 1934.

Tin presents problems which differ in many respects from those of rubber. Tin not mined remains in the earth as a potential source of supply. Rubber

not tapped is lost for that period, and does not increase future supply. Rubber trees must be carefully tended to prevent damage, whereas tin may be allowed to remain in the ground indefinitely without deterioration. Price has little effect on the use of tin because a commercially satisfactory substitute has never been developed, and the price of tin is a very small portion of the price a consumer pays for a canned product. Price of crude rubber materially affects the price of the articles manufactured from it, and substitutes are available. Chinese labor in the tin industry is unskilled, and labor forces may be reduced or increased quickly. In the case of rubber, highly skilled plantation forces and long-time labor contracts make reduction in labor expense difficult. A comparison of any two industries would reveal similar differences in the problems confronting each.

From the producer's point of view, it is especially important that rubber prices be stabilized at a level which will yield a consistent yearly profit. Plantations must be kept in operation to avoid deterioration, and even in periods of extremely low prices, such as have prevailed during the past five years, there is a great temptation to run at full capacity to cover "out-of-pocket" expenses. Rubber is not an annual crop, and continuous careful tapping does not injure the trees.

The problem is also highly important to the manufacturers of rubber articles, some of the most important of whom are located in the United States. Because of the distance from the producing areas and the necessity of having adequate supplies available, it is essential that the large American rubber manufacturers have approximately a four months' supply of crude rubber on hand and in transit to the United States. During periods of good business it is necessary for the large companies to carry an inventory of about 40,000,000 pounds of crude rubber. Thus, a fluctuation in price of 1 cent a pound results in a profit or loss of $400,000. This generally means only a loss, for the manufacturers are unable by reason of severe competition to profit by the increases, as the price of finished products must be kept down until the products manufactured from the low-priced rubber have been sold. Increases in crude-rubber prices often necessitate the acquisition of additional working capital, which may be required at times when investment conditions are unfavorable to the raising of capital. The magnitude of the problem may be inferred from the fact that, during the period from November, 1925, to February, 1933, the prices of crude rubber ranged from 104.8 cents per pound to 2.95 cents per pound.[1]

Attempts to Regulate Prices and Control Production

The seriousness of this problem of price fluctuation has been recognized by the larger manufacturers, all of whom have tried various methods to offset it. In December, 1926, a group of American tire and automobile manufacturers established a pool to maintain a floating supply of crude rubber in order to protect themselves against inventory losses caused by wide price fluctuations. Resources amounting to $40,000,000 were available, and the object of the plan was to sell quantities of crude rubber in the open market when the price was rising and to replenish supplies when prices fell. The pool operated for about two years, and its

[1] *Standard Trade and Securities, Statistical Bulletin—Base Book Section*, January, 1932, p. 279; and *Statistical Bulletin*, August, 1934, p. 18.

participants suffered heavy losses in 1928 when the announcement of the abandonment of the Stevenson Plan caused prices to drop rapidly.

The New York Rubber Exchange was established in 1926 to afford manufacturers an opportunity to hedge crude-rubber purchases. The plan has been satisfactory for small manufacturers; but the larger manufacturers which require huge quantities cannot protect themselves in this manner, because the volume of their trading would disrupt the orderly functioning of the exchange.

Another possible solution of the problem was for the manufacturers to obtain control over a supply of crude rubber by plantation ownership. In 1924 the Firestone Rubber Company leased a million acres of land in Liberia and 35,000 acres in Mexico. In 1927 the Ford Motor Company received a 3,000,000-acre concession in Brazil. The largest development of actual producing area was obtained by the United States Rubber Company, which planted about 100,000 acres in Sumatra, representing an investment of about $27,000,000. Even with this huge investment, the plantations owned by the company could produce but one-third of its requirements. During periods of low rubber prices, the operations of its plantations resulted in a large monetary loss to the company.

The first attempt to regulate production of crude rubber was made by British planters in 1920 and 1921. On account of high prices of rubber and large profits following 1910, the acreage of rubber plantations was extended well beyond what was required to supply demands for rubber when the trees came into bearing. War conditions and growing demands of the automobile industry absorbed this large increase in production until 1920. In 1920 the demand for crude rubber declined, and huge stocks accumulated in London and New York, causing a rapid decline in prices. In November, 1920, having failed in attempts to secure action by the British Government, a number of planters voluntarily agreed to reduce production 25%. Their efforts were neutralized by the trade slump during the year the plan was effective. In 1921 some of the planters refused to continue voluntary restriction, and it was abandoned. The plan controlled but a small part of the crude-rubber producing area, there was no effective organization to insure compliance with its terms, and it was of too short duration to be effective.

The second attempt to regulate production was the Stevenson Plan, put into effect by the British Government in 1922 for areas under its control. The plan set up for each plantation a "normal" output, based on actual output from November 1, 1919, to October 1, 1920. A minimum export duty was established to cover the percentage of "normal" allowed, with a much heavier duty on all production over the percentage allowed. The allowable percentages were changed as crude-rubber prices for the previous three months rose or fell. The plan thus attempted to provide a variable supply to meet variations in demand as evidenced by price changes.

When prices started to rise as the results of restriction became noticeable, large increases in production resulted in areas not included in the plan, principally by native producers in the Dutch East Indies. As soon as the trees in these areas came into bearing, the large additional supply broke the price of crude rubber; and the Stevenson Plan was abandoned in 1928.

Continual loss of trade caused the British Government to abandon the plan, the increased shipments from Dutch areas having reduced Great Britain's percentage of world crude rubber production from 67% to 59%.[2] Failure of the plan was directly attributable to the lack of cooperation of the Dutch Government; the area restricted was not large enough to insure control over a sufficient percentage of world production.

A temporary measure was adopted in 1930. It was generally known as the "Anglo-Dutch Agreement." This plan provided for suspension of all tapping during May, 1930. The plan was ineffectual, the period of its operation being too short to reduce world stocks to any great extent.

From this brief description of past efforts to adjust supply and demand factors and to stabilize prices of crude rubber, it is apparent that no notable success was attained as a result of the operation of any of these plans.

Necessary Factors for a Successful Plan

In the light of past experience, let us now examine the conditions which must be present if a plan of restriction is to have a chance to succeed.

In the first place, it is vitally necessary that the plan control a large percentage of the total area available for the production of rubber. The failure of the Stevenson Plan is an excellent example of how the absence of this requirement leads to failure.

Secondly, it is absolutely essential that complete cooperation and faithful compliance with the terms of the plan be obtained both from the foreign governments concerned and from the producers in each area. Nothing will cause the breakdown of such a plan more quickly than evidences of bad faith in carrying out its terms.

A third requirement is that the plan be of sufficient duration to insure an adequate trial of its possibilities.

Fourthly, it is necessary that the plan be fair to both producers and consumers. To accomplish this, a moderate form of restriction, resulting in a stable price which allows efficient producers a fair profit without passing on excessive production profits to the consuming countries, is necessary. If the plan is so drastic as to result in such abnormally high prices as those which followed the adoption of the Stevenson Plan, the following are almost certain to take place:

1. The increased use of reclaimed rubber will immediately become evident as the price of crude rubber rises above 15 cents per pound.
2. Consuming countries will redouble efforts to utilize substitutes for crude rubber, and to develop synthetic rubber.
3. High crude-rubber prices will seriously interfere with efforts to substitute rubber for other materials, and will retard the development of new uses for rubber.
4. High prices and resulting huge profits to producers will encourage growing of rubber outside the restricted areas, and lead consuming countries to develop other sources of supply.

The New Restriction Agreement

With the above requirements necessary to insure a *possibility* of success, it is desirable to examine the current restriction plan to see if it meets these requirements, and if so, to what extent.

[2] U. S. Bureau of Foreign and Domestic Commerce, Special Circular No. 1111 (Revised March, 1932), *Rubber and Its Use in the United States*, by E. G. Holt, Chief, Rubber Division, p. 15.

The preamble to the Restriction Agreement states its purposes to be "to regulate production to reduce world stocks to normalcy; to adjust supply to demand in an orderly manner; and to maintain a fair price which will be remunerative to producers." The plan is effective in the Straits Settlements, Federated Malay States, Unfederated Malay States, Malaya, Dutch East Indies, Ceylon, India (including Burma), French Indo-China, North Borneo, Sarawak, and Siam. These countries produce about 99% of the world's supply of crude rubber at the present time. The plan is to run for a minimum period of about four and one-half years, commencing June 1, 1934, and terminating December 31, 1938.

Administration of the plan is vested in an International Rubber Regulation Committee, whose members are elected by the various producing countries, each country voting on the basis of its set quota, one vote being allowed for each 1,000 tons of basic quota. The most important function of this committee will be the fixing or varying of the permissible exportable percentages of basic quotas, for which a three-quarter majority of total votes is necessary.

Established quotas have been based on the full productive tonnage of the various countries and the individual producers within each country, increasing from year to year as trees already planted come into bearing. These quotas are set on yearly productive capacity of 1,050,000 tons for all countries, and an estimated world consumption of 900,000 tons. World stocks in June, 1934, were estimated at 456,000 tons, but a desirable normal stock was set at 225,000 tons; the problem being to reduce the excess stocks by moderate restriction of production.

The control of native Dutch producers is left to the Dutch Government, which contemplates placing a tax of sufficient severity on exports to keep native production from exceeding 71.5% of the quotas allowed the Dutch plantations. This method of control over native production is necessary, as the task of establishing quotas for the thousands of constantly changing small native holdings would render administration of the quota plan quite difficult in their case.

Special treatment is accorded French Indo-China because that country is not considered an exporter to world markets. Its present annual production of about 30,000 tons is consumed entirely in France. In the event that production later exceeds French requirements, measures of restriction are provided by delivery of excess quantities to the International Committee for disposal.

Siam forms another exception in that it is exempt from the planting prohibition and is allowed to plant an area not exceeding 31,000 acres during the period of regulation. Siam is not at present important as a producing country, but it is important because it is adjacent to large producing areas. This location makes smuggling convenient.

Prevention of further expansion is provided for through prohibition of new planting, limitation of replanting to a maximum of 20% of existing planted area, and a ban on export of plants, seeds, or cuttings to regions outside the agreement.

Provision is made for the regulation of stocks of rubber in the producing areas. To prevent accumulations, producers are allowed to keep only normal supplies, *i.e.*, 20% of the rubber produced and removed from their holdings during the preceding twelve months,

or alternatively, a quantity equivalent to twice the amount they are entitled to export during any month. Each government participating in the plan is to limit all other stocks of rubber in its territory to 12.5% of the exportable percentage of the basic quota allowed for its territory during any control year.

The consuming countries are represented by a committee, which is to confer periodically with the International Rubber Regulation Committee. This committee has no vote and sits in an advisory capacity only.

Methods of Administration

These, in general, are the provisions of the plan. Necessary laws for carrying out the plan have been put into effect in the various producing areas. In British Malaya the administration of the scheme is provided for by the following measures:

1. Fixing the standard production of every holding, which will be evidenced by the issuance of a certificate stating the individual allotment, or alternatively, of coupons to the amount of rubber which the owner will be entitled to export during the prescribed period.

2. Registering exporters, who alone will be allowed to ship crude rubber from any port in British Malaya.

3. Issuing certificates of origin, without which no rubber can be imported to, or exported from, the country.

In the Dutch East Indies the principal problem is the control of native production. The authorities are administering the restriction in the case of natives by means of a varying export duty. This method is based on the theory that there exists a definite relationship between the price of crude rubber and the export of native rubber, so that an artificial depression of the price received by the native cultivators in the interior would automatically result in a curtailment of native production. The "Peoples' Council," on which the natives are represented, disapproved measures to put this system into operation, but it was promptly overruled by the Dutch Government, which fixed the original tax at 5 guilders per 100 kilograms. The tax was successively raised to 8, to 10, and, on September 1, 1934, to 20 guilders. The Government, in order to mollify the natives, promised that part of the money collected from the tax would be used for relief purposes in the native districts.

It is generally recognized that the successful administration of any rubber-restriction plan depends to a great extent on the Dutch Government's ability to control native production. The foregoing paragraphs bring out two significant facts; (1) that the Dutch Government is determined to carry out its obligations under the International Rubber Agreement, and (2) that the natives are at present opposed to the Government's measures and will not willingly cooperate.

Strong and Weak Points of the Plan

So much for the provisions of the plan. Now the strong and weak points in the new agreement will be examined in order to arrive at an opinion as to its prospects for success.

First, taking up the elements of strength, it is found that one glaring weakness of past plans has been eliminated, that is, lack of control over a sufficient proportion of the world production. The territories included in the plan produce about 99% of the world's supply of crude rubber.

As it is planned to reduce world stocks gradually, only moderate reductions from the basic quotas will be necessary. Drastic reductions in production would tend to obstruct administration of the plan and lessen the chances of honorable fulfillment of restrictions adopted.

With the exception of the native Dutch producers and Siam, the measure seems to command general assent among producing countries and among individual producers within each country.

Administratively, the plan seems to be well designed and flexible, and the governments concerned have indicated by their actions that they are willing to enforce the restrictions. The duration of the plan is sufficiently long to insure a fair trial of its adequacy. It does not attempt direct price fixing, but merely attempts to bring about a stable price by reducing stocks on hand. Control of many of the large plantations has passed from the hands of the original producers to the banking interests. The banks are likely to have a more shrewd viewpoint, and will suffer no remorse in cutting down trees and eliminating tapping. Persons associated with the actual work of cultivation consider such acts as contrary to the laws of nature.

Predominant among the weaknesses of the plan is the fact that cooperation between countries and producers within each country will be extremely difficult to attain. The failure of the Stevenson Plan was hastened by lack of cooperation on the part of the Dutch Government. Governments, like individuals, have from time immemorial been unable to agree on economic principles and practices. The Dutch Government is confronted with the difficult task of controlling many thousands of native producers, many of whom are Asiatics incapable of any form of organized cooperation. The unpopularity of the measure among such producers has already been evidenced by the fact that it was necessary for the Dutch Government to overrule the "Peoples' Council" in order to impose the export tax on native rubber. Natives engaged in rubber raising usually have no other means of livelihood, and they will continue to produce enough to support themselves, even though their already low standards of living must be further lowered. Past experiences in dealing with this class of grower have been highly unfavorable.

Governments in all the producing areas are confronted with similar difficulties in preventing violations of the agreement. It seems to be a well-established trait of human nature to consider the benefits accruing to one's neighbor and to judge from these benefits whether he is the gainer or the loser, rather than to consider his present status as compared with his previous one. One example will serve to illustrate this point. General comment from Ceylon was favorable to the adoption of the plan, and it was considered that Ceylon was generously treated in the assignment of quotas. In spite of this fact, reports from Ceylon state that many producers have already attempted evasion by transplanting four-year old stumps from nurseries to small plots of land in order to have them counted and used as the basis for future quota assignments. If producers so generously treated feel they should adopt such subterfuges, it is quite certain that producers in areas which have been assigned quotas not so favorable will adopt these or other means of evading terms of the agreement.

The exceptions made in the case of Siam and French Indo-China lead to criticism and tend to destroy the equity of the plan. In spite of very liberal treatment, Siam has as yet refused to ratify the agreement.

Manufacturers are represented in an advisory capacity only, which leads to the criticism in consuming countries that the scheme advances the interests of producers at the expense of consumers. Conversely, it must be stated that the administrative problems are already sufficiently intricate without complicating the situation by allowing manufacturers, whose interests seldom coincide with those of producers, to assist in deciding matters of policy.

Increasing pressure will undoubtedly be brought to bear in producing countries to secure successively higher prices for crude rubber. Costs per pound are increased disproportionately as production is decreased, because of the large overhead expense which goes on regardless of whether the rubber trees are tapped or not tapped.

In addition to the internal factors which have been discussed, there are external forces of even greater importance. A commodity entering into international trade is subject to economic conditions throughout the entire world. Such factors as general business conditions, changes in price levels, conditions in allied industries, tariffs, technological changes and advancement, credit conditions, Acts of God, *etc.*, tend to outweigh conditions peculiar to the individual industry. Obviously, consideration of these forces is far beyond the scope of this article,[2] but their presence must be recognized in estimating the possibilities of success for such a plan as the new rubber agreement. Such plans, as a general rule, carefully consider factors involving supply, but preplanning for commodities should also involve consideration of demand factors, usually much more difficult to foresee.

Conclusions

After consideration of all the facts brought out in the foregoing paragraphs, the following conclusions may be stated:

1. The present plan is far superior to past rubber plans and eliminates many of their weaknesses.

2. If the present policy of moderate reduction in production is continued, the plan will assist in stabilizing rubber prices by reducing world stocks gradually, and by creating a general feeling of confidence in the rubber market it will minimize price fluctuations. The fear that accumulated stocks may be placed on the market at any time is a serious obstacle to price stabilization.

3. The plan does not offer a permanent solution to the problems of overproduction in the rubber industry. Difficulties of administration, lack of cooperation, and the world-wide influences outside the industry will tend gradually to reduce the effectiveness of the plan.

[2] For a partial discussion of such forces see Copeland, Melvin T., *Raw Material Prices and Business Conditions*, Harvard Business School Division of Research, Harvard Business Research Studies, No. 2, May, 1933.

CONTROL OF PRODUCTION UNDER THE ICE CODE[1]

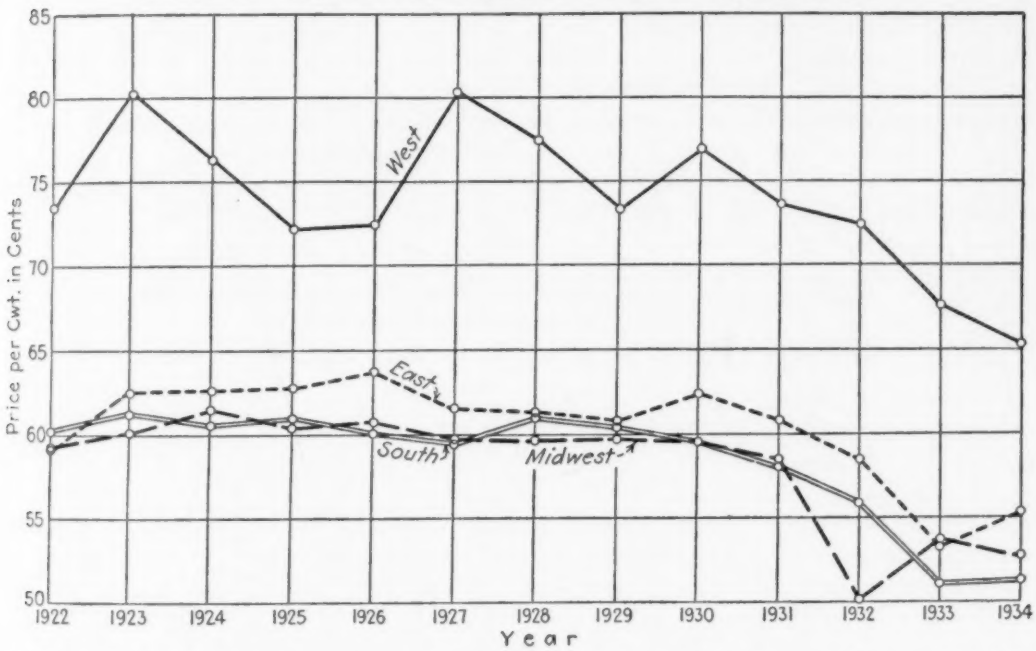
By BENJAMIN M. PARKER

The Oklahoma Ice Law

THE National Association of Ice Industries, hereafter referred to as the trade association, was organized in 1917. It is a non-profit organization of ice manufacturers, especially created for the purpose of promoting the common advantage of this group. The largest ice manufacturing companies are its financial underwriters. It publishes ice prices and preaches price maintenance.

Graphs I and II give evidence of its success in maintaining stable prices. It also advocates production control. By active lobbying it induced the Oklahoma legislature to pass a law in 1925 which would prevent the construction of new ice plants, unless a special State Ice Commission manifested its approval of the proposed plant, by issuing a certificate of public convenience and necessity.[2]

GRAPH I. DOMESTIC ICE TRADE PRICES IN VARIOUS SECTIONS



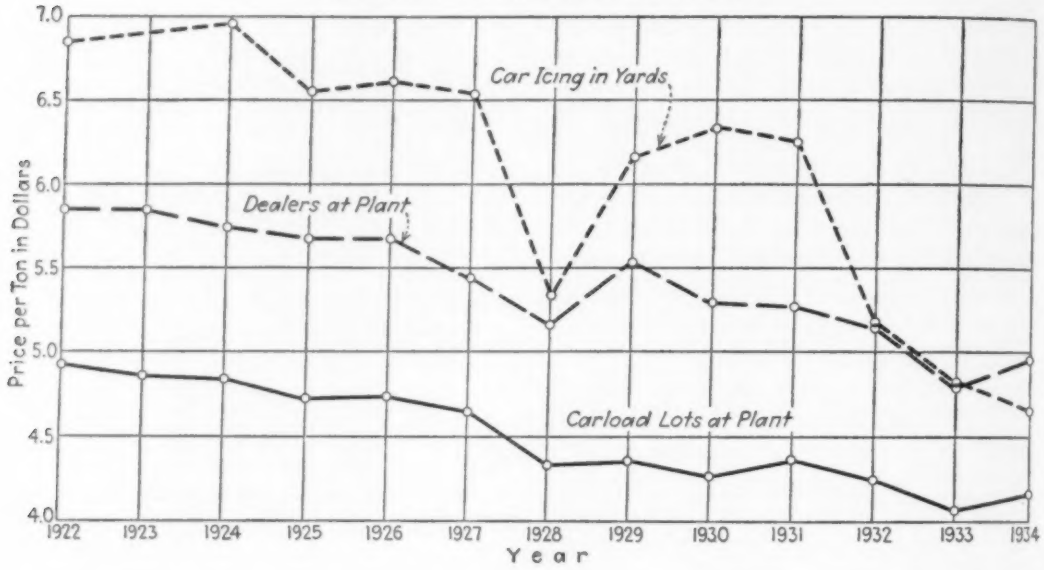
The Oklahoma Ice Law was a trade association victory. The existing Oklahoma ice manufacturers prospered. Oklahoma prices created new "highs." Oklahoma domestic trade prices were 15% higher than the average prices in all other southern states.

[1] Summary of paper prepared for Professor James A. McLaughlin's class in Government Control of Business at Harvard Law School.

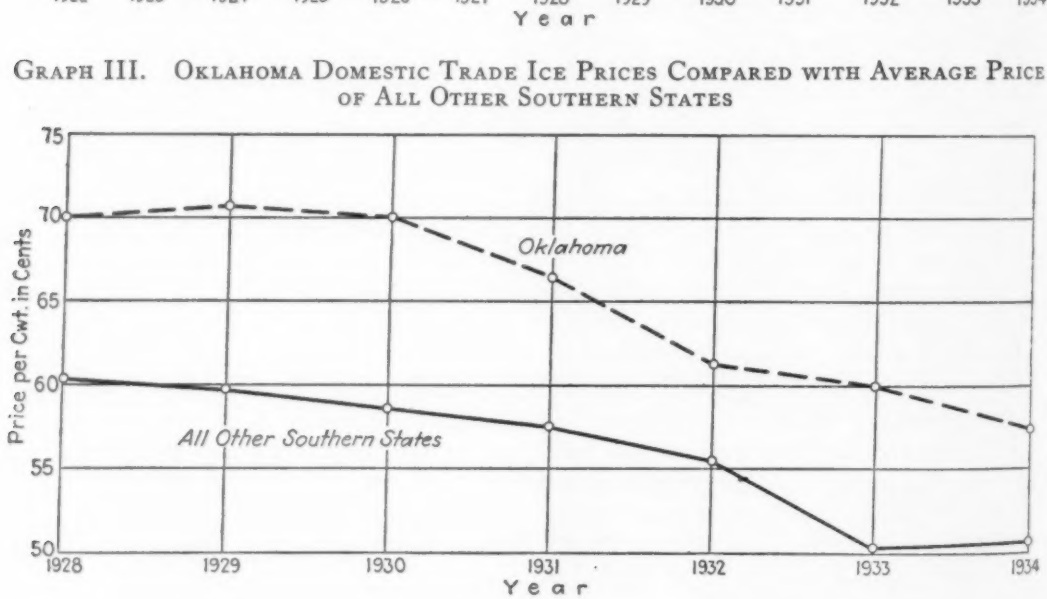
[2] Chapter 147 Session Laws of Oklahoma, 1925.

Five years later, *i.e.*, in 1930, the constitutionality of the Oklahoma Ice Law was challenged by one Liebmann. He began to build an ice plant without applying to the State Ice Commission for a certificate of public convenience and necessity. The New State Ice Company with the support of the trade association sought to enjoin Liebmann. Its bill for an injunction was filed in the Federal Court on March 31, 1930. A decree was entered on June 24, 1930, denying an injunction and declaring the law to be unconstitutional. This decree was affirmed in the Circuit Court of Appeals on August 27, 1931, and in

GRAPH II. WHOLESALE ICE PRICES



GRAPH III. OKLAHOMA DOMESTIC TRADE ICE PRICES COMPARED WITH AVERAGE PRICE OF ALL OTHER SOUTHERN STATES



the United States Supreme Court on March 21, 1932.[3] The Oklahoma Ice Case tells its own story. It is that the Federal Courts penetrated the mocking manifestation of the trade association which sought to become a bedfellow of the State. These decisions also had a decided effect upon prices. Graph III shows the sudden and steady drop in Oklahoma ice prices, beginning with the lower court decision.

The NIRA Ice Code

Trade association morale was at its lowest ebb when the National Industrial Recovery Act was passed on June 16, 1933. The trade association was gasping for breath. Unhesitatingly it sought to become resuscitated under the promising oxygen hood erected by the NIRA. It immediately prepared the Ice Code. It was one of the very early codes, and was approved on October 3, 1933. Article XI provides for the control of production.[4]

The gesture which gave the Oklahoma Ice Commission the power to fix maximum prices is omitted in the Ice Code. Self preservation seemed to prompt the writing of Article XI. "No admission into the ice industry" was the new battle cry of the chief supporters of the trade association. It was they who usurped unto themselves the power to control new production facilities under governmental protection. Note the membership of the Ice Code Authority in which was vested the power to issue certificates of public convenience and necessity:

M. Taylor, a small Texas operator, was appointed chairman.

M. H. Robbins, President of the Union Ice Company, the largest operators in the Far West.

R. J. Hancock, President of the Atlantic Ice Company, which operates in the Southeast.

C. C. Small, President of the American Ice Company, the organization with the largest capitalization and operating in the East.

R. C. Suhr, President of the City Ice & Fuel Company, which operates in 26 states and in Canada, with operations concentrated in the Middle West.

Leslie C. Smith, the executive director of the trade association, was appointed Executive Secretary-Treasurer.

P. A. Weatherred, the secretary and counsel of the Texas Ice Association, a part of the National Asso-

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[3] *New State Ice Co.* v. *Liebmann*, 285 U. S. 262 (1932).

[4] "If at any time an individual, firm, corporation or partnership, or other form of enterprise, desires to establish additional ice production, storage, or tonnage in any given territory, said party must first establish to the satisfaction of the Administrator that public necessity and convenience require such additional ice-making capacity, storage or production. The ice manufactured from any plant that was not in actual operation on September 8, 1933, shall not be sold to any purchaser for a period of twelve months from the date subsequent to September 8, 1933, upon which the operation of such plant may be initiated or resumed, at prices lower than the lowest corresponding prices in good faith published, as required by this Code, in a schedule or schedules governing prices to such purchasers; providing and excepting that this provision will not apply to the sales of ice manufactured by the following:

"A. Plants installed upon authority or a certificate of necessity and convenience duly issued by the Administrator; or

"B. Plants temporarily shut down for repairs for a period not in excess of twelve months prior to September 8, 1933; or

"C. Plants that were owned or whose output was controlled by companies or operations that were on September 8, 1933, in good faith engaged in the business of selling ice to the general trade in the market in which the ice from such plants is proposed to be sold, such plants being of the intent in good faith to further the economic conduct of the business of such company or operation."

ciation of Ice Industries, was appointed General Counsel.

Ice & Refrigeration is the name of the trade association monthly. Its issues from October, 1933, to December, 1934, disclose that only two new plants were sanctioned during this interval by the Ice Code Authority.[5] In *both cases, contracts* to build antedated October, 1933. Consequently, a refusal to issue the certificate of public convenience and necessity to these two companies was not within the power of the Ice Code Authority. During these same fifteen months, one old ice plant in Columbus, Ohio, was given permission to increase its capacity by thirty tons a day; such permission was granted only after General Johnson had overruled the decision of the Code Authority of the Ice Industry.[6] It may be of interest to recall that the president of the City Ice & Fuel Company is a member of the Code Authority of the industry. It is of even greater interest to note that the application of the Columbus plant was opposed by the City Ice & Fuel Company, the largest ice company of Columbus. General Johnson's reversal seems to indicate that the monopolistic practices with which the City Ice & Fuel Company was charged by the applicant had some merit.

Attempts to substantiate the reports in *Ice & Refrigeration* were made. The Secretary of the New England Ice Dealers Association was requested to write to the Code Authority of the Industry. He did. He most courteously informed me that "Washington" did not supply him with the desired information. The author himself then wrote to the Executive Chairman of the Code Authority requesting such information; he, too, did not receive the desired information. He did, however, receive unsolicited advice, in his answer of January 12, 1933:

> . . . We are not in position to (review our files) at this time . . . frankly, I am unable to see where such data could be of much assistance in writing a paper on the legal implications of this provision (Article XI) of the Ice Code.

The ice industrialists' administration of the Ice Code certainly fulfilled the prophesies of an authority on anti-trust laws, Professor James A. McLaughlin of the Harvard Law School:

> The passage of the Act, however, indicates some acceptance of the prevalent business men's fallacies. There is consequently danger that the Act will be administered from a similarly short sighted and unsound point of view. . . . There is much . . . danger that it will be administered so as to tend to increase the power of organized groups to exploit the rest of us.[7]

The Smaller Independents and Monopoly

Mr. Clarence Darrow, in his capacity as Chairman of the National Review Board of NRA, found that Article XI of the Ice Code was monopolistic and oppressive and that it was being administered in the interests of the large companies.

> Monopolistic practices obtain in this industry and small enterprise is oppressed, apparently because the code was made by representatives of the larger companies, in whose interests it seems to be administered. . . . Article XI of the Ice Code provides that there shall be no establishing of additional "ice production, storage or tonnage," unless the Administrator shall be satisfied that public necessity and

[5] 86 *Ice & Refrigeration* 173 and 310 (1934).

[6] 86 *Ice & Refrigeration* 379 (1934).

[7] McLaughlin, James Angell, ed., *Cases on the Federal Anti-Trust Laws of the United States.* Second edition. Cambridge: Published by the editor, 1933, p. 719.

convenience require such legislation. It is to be noted that in the State of Oklahoma the legislature enacted a similar provision and the United States Supreme Court successfully held the provision to be unconstitutional. . . . It is clearly monopolistic, oppressive, and should be eliminated from the code.[8]

Article XI of the Ice Industry Code was declared illegal on November 26, 1934.[9] In this case, Mr. Justice Doherty decreed that Article XI was inconsistent with the so-called Borah proviso, "that such code or codes shall not permit monopolies or monopolistic practises," in Section IIIa of the National Industrial Recovery Act:

Since Article XI of the Ice Code tends to foster monopoly, it is contrary to the National Recovery Act.

The smaller men in the industry were not satisfied with the Code Authority's persistent refusal to issue any certificates of public convenience and necessity. These independents claimed that the ice industrialists who composed the Code Authority did not welcome any newcomer or any other business rival. The NRA hearkened to the complaints of the little man. It altered this procedure, effective December 14, 1934. A Deputy Administrator was appointed. He was not an ice man. All applications for new or increased ice production were addressed to him. The Deputy Administrator was given two assistants who also were not previously connected with the ice industry. Their titles are, respectively, Field Assistant Deputy Administrator and Field Economic Adviser. They do field work. They make separate investigations after the receipt of the application.

Such procedure created the hope that more objectivity would permeate the thought process which considers the applications for certificates of public convenience and necessity. Such hopes were soon justified. Under this new administration of non-ice men, certificates of public convenience and necessity are being issued. But will the compromise, which caused the ice barons to be demoted to the rank of consultants to the neutral administrative board vested with authority to issue the certificates, save Article XI from being a monopolistic instrumentality? In the author's opinion, Article XI will not survive the legal test, unless the United States Supreme Court reverses itself. This is not likely. Mr. Justice Sutherland saw monopolistic control under the less drastic Ice Law of Oklahoma:

The practical tendency of the restriction . . . is to shut out new enterprises and thus create and foster monopoly in the hands of existing establishments, against, rather than in aid of, the interest of the consuming public. . . . The control here asserted does not protect against monopoly, but tends to foster it. The aim is not to encourage competition, but to prevent it, not to regulate the business, but to preclude persons from engaging in it.[10]

The Break-over Chart

An analysis of production costs and of the resulting profits at various wholesale ice prices will permit us better to understand the forces which motivated the trade association to write Article XI into the Ice Code.

For the purposes of this study, let us analyze a 100-ton ice plant, with a total investment of $200,000. The analysis is graphically represented by the "Break-over Chart," Graph IV. Fur-

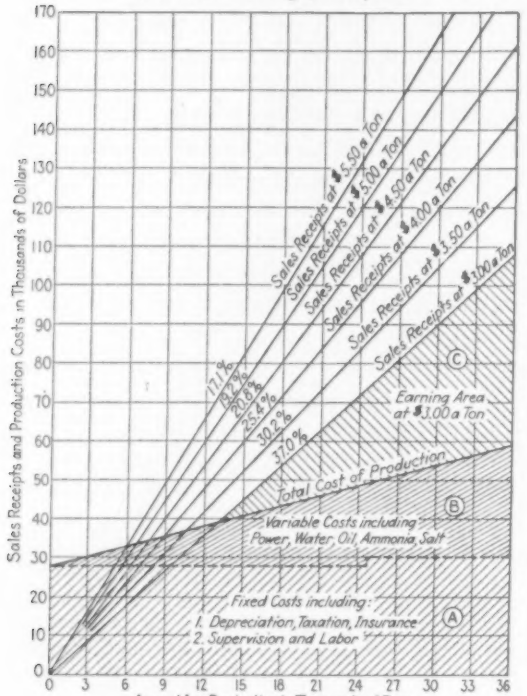
[8] 86 *Ice & Refrigeration* 376 (1934).

[9] *People ex rel. Kepler Hershel Purdy* v. *White Plains Ice Service, Inc., and Mario Bord.* Reported in *Westchester Law Journal*, November 26, 1934.

[10] *New State Ice Co.* v. *Liebmann*, 28 U. S. 262, 278, 279.

GRAPH IV. BREAK-OVER CHART*

Production Costs and Sales Receipts at Various Production Percentages Indicating Break-over Points at Which Earnings Begin, and Earning Areas for 100-ton Plant Costing $200,000



*The sales receipts lines represent the wholesale ice prices or sales receipts by the plant owner. The intersection of such line and the "Total Cost of Production" line is known at the "break-over point" at that particular sales price. At this point earnings begin. The "Break-over Chart" depicts, and Table I indicates, the production percentage of plant capacity at which earnings begin at various wholesale prices. The measure of plant earnings at any given production percentage and wholesale price is obtained by drawing a perpendicular line at the desired annual production and extending it to the sales receipts line of the particular wholesale price. The distance between the intersection of this perpendicular line with the line representing total production costs and the aforementioned sales receipts line graphically represents the total earnings. The ordinate is the scale, which translates the length of the line into dollars. "C" represents the earning area at various production percentages, at the sale price of $3 a ton.

ther assumptions based on practice follow. Annual ice production capacity is 36,000 tons. Yearly depreciation, taxation and insurance are 8% of the investment, or $16,000. Supervision and labor costs are $12,000 a year up to 60% production, and $14,000 a year from 60% to 100% production. Hence the fixed costs so allocated are $30,000 a year. The variable cost is 80 cents a ton. On the chart, "A" represents the fixed costs and "B" represents the variable costs. The line labelled "Total Cost of Production" permits us to obtain the total production costs at any production rate.

TABLE I. PRODUCTION PERCENTAGE AT WHICH EARNINGS BEGIN, AND EARNINGS AT VARIOUS WHOLESALE PRICES
(100 Ton Plant, Costing $200,000)

(a) Wholesale Sales Prices in Dollars per Ton	(b) Production Percentage of Plant Capacity at Which Earnings Begin	(c) Earnings, in Dollars, for Each Percentage of Increase in Production beyond Percentages in (b)
3.00	37.0	780
3.50	30.2	960
4.00	25.4	1,140
4.50	20.8	1,320
5.00	19.2	1,500
5.50	17.1	1,680

TABLE II. ESTIMATED EARNINGS AT DIFFERENT WHOLESALE PRICES AND VARIOUS RATES OF PRODUCTION
(100 Ton Plant, Costing $200,000)

Proportion of Production to Plant Capacity in %	Earnings at Various Wholesale Prices in Dollars					
	3.00	3.50	4.00	4.50	5.00	5.50
25.0	.....	.....	−500	4,000	8,500	13,000
33.3	.....	3,000	9,000	15,000	21,000	27,000
41.7	3,500	11,000	18,000	26,000	33,500	41,000
50.0	10,000	19,000	28,000	37,000	46,000	55,000
58.3	16,500	27,000	37,500	48,000	58,500	69,000
66.7	23,000	35,000	47,000	59,000	71,000	83,000
75.0	29,500	43,000	56,500	70,000	83,500	97,000
83.3	36,000	51,000	66,000	81,000	96,000	111,000
91.7	42,500	59,000	75,500	92,000	108,500	125,000
100.0	49,000	67,000	85,000	103,000	121,000	139,000

Table II, obtained from the "Break-over Chart," summarizes the estimated earnings at different production per-

centages at various wholesale prices. The third column of Table I indicates the earnings for each percentage of increase in production beyond the "Break-over" point.

The conclusions from a study of the "Break-over Chart" are that, the higher the sales price, the lower the "Break-over" point and the greater the earnings for each percentage of increase in production beyond that point. Further, the earnings increase according to the laws of geometric progression. It would, therefore, be natural to find the ice men dedicated to the task of devising schemes which would permit them to sell at high prices and which would at the same time permit them to enjoy high production percentages. Graphs I and II tell the story of the mystic constancy of ice prices to the consumer in various sections, after the organization of the National Association of Ice Industries in 1917. Such constant prices were not necessarily established by the law of supply and demand. The break in the prices in the West during 1924, 1925, and 1926 is attributable to attempted governmental vigilance. In 1925, an anti-trust prosecution was initiated in the Federal Courts in the District of Nevada. When the case was dismissed the prices soared. No good reason can be assigned for the unusually high prices on the West Coast except good leadership in the trade association and the wonderful western loyalty and gentlemanly adherence to a selfish objective.

Ice-plant Construction

A survey of ice-plant construction during the last thirty years is a necessary orientation, preceding any evaluation of Article XI of the Ice Code. Mechanical refrigeration is essentially a modern development. The first successful ice manufacturing plant was erected in 1890. Fourteen years later there were some 2,000 ice plants in operation. Today, there are nearly 8,000 plants.

From 1904 to 1909, the average capacity of the newly built ice plants was 65 tons a day. An average of 156 plants a year were built during this five-year period. (See Table III.) The panic of 1907 automatically ended the building of large plants. During 1910 and 1911 the average capacity of the newly built ice plants was 15.2 tons a day. But in these two years an average of 203 plants a year were built throughout the land. The demand for ice in the small cities was apparent, and the investment was prudent. The years 1912, 1913, and 1914 saw great expansion. An average of 280 plants were built during each of these years. The average capacity of these plants was 40.8 tons a day. During the World War years, smaller plants with an average daily capacity of 34 tons were built. The average number of plants each year was 174.4.

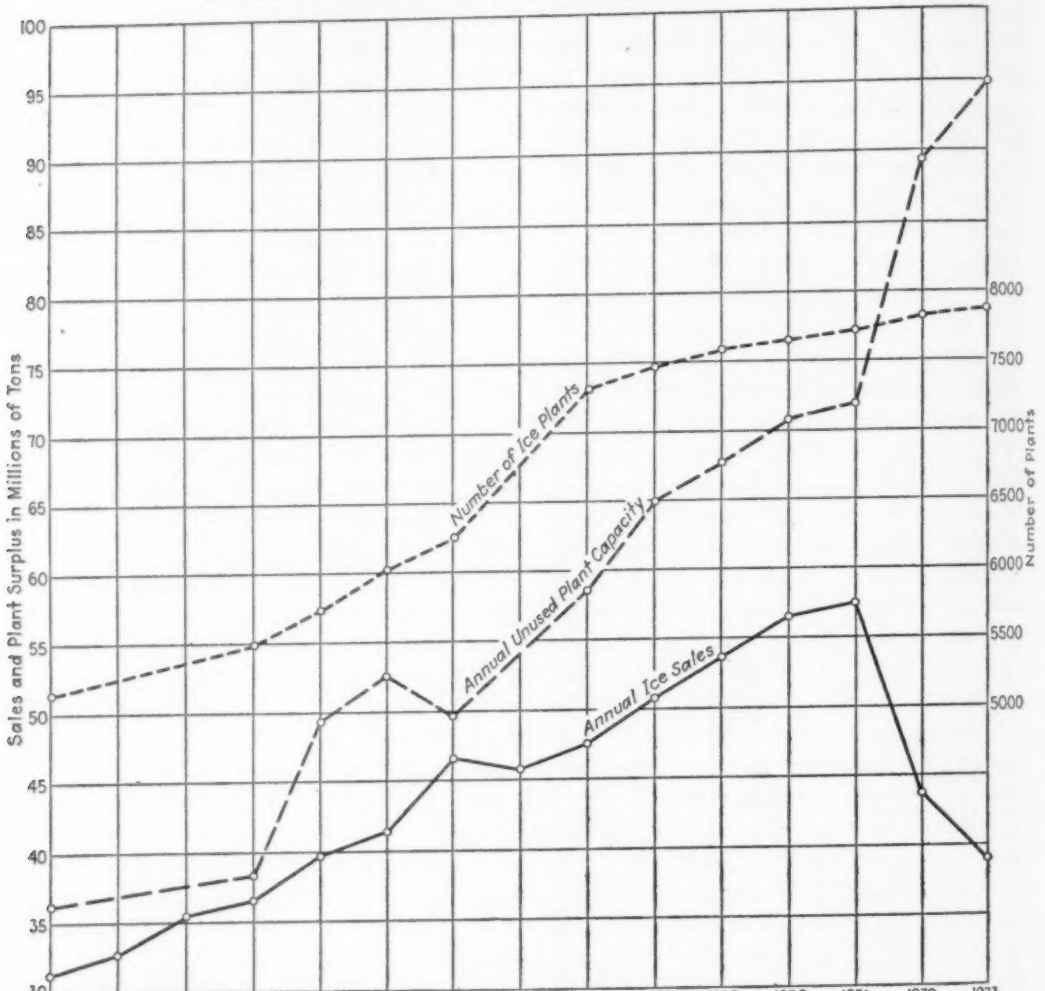
After the War the era of larger plants was ushered in. During 1920, 1921, and 1922 the average capacity of the newly built ice plants was 91.5 tons a day. But in these three years an average of 127.6 plants a year were built, and the total increase in plant capacity was slightly less than the increment during 1912, 1913, and 1914.

The year 1923 gave the ice industry its first great surplus. Two hundred and forty-seven plants were built and the average capacity of each was 93.4 tons. The increase in daily capacity was nearly twice as great as the average during the post-war years. A reaction set in. Smaller plants were built in the succeeding year.

In 1926 and 1927 there was more expansion; an average of 538 plants were built during each of these years, the average capacity of each plant being 22.6 tons a day. But this total increment in daily capacity was only slightly more than half of the 1923 splurge.

The 1923 splurge is understandable. During 1922, the ice industry experienced its minimum annual unused plant capacity. (See Graph V.) The reaction was natural. Only according to hind-sight observations was it a bit too optimistic. The expansion during 1926 and 1927 followed the second lowest minimum annual unused ice capacity in the history of the modern ice industry. But the big business speculation of 1928 was an inexcusable tragedy. The annual unused plant capacity was already very high. The addition of 136 plants with an average capacity of 209 tons a day, which resulted in increasing the daily production capacity of the ice industry by

GRAPH V. INCREASE IN UNUSED ICE PLANT CAPACITY



28,405 tons a day, was surely not a response to the demands of the ice consumer. There was similarly no economic excuse for the 114 plants, with an average capacity of 262 tons a day, which were built in 1929 and 1930 respectively.

Arthur Stone Dewing has accounted for this reckless construction of large ice plants. He accuses the "hybrid utility" which entered the ice business in order that it might increase its "production and sale of bonds and stocks."[11] A case in point follows:

> This particular holding company was promoted ostensibly as an electric company, but it was in reality an ice company with a plating of electricity. And this single case is analogous to a score or more of mixed utility holding companies promoted in the period from 1924 to 1929 for the primary purpose of providing bankers with profitable wares to be sold to an uncritical public affected with the emotionalism of the new era psychology.[12]

In the year 1932 the sales of ice dropped. (See Graph V.) Ice profits vanished with low production. This played no insignificant part in the ruin of many of the public utility holding companies.[13]

Conclusion

The speculating promoters succeeded in saddling the ice industry with uneconomical ice production capacity. The uncritical security-buying public had been sufficiently mulcted by them. It would therefore be very natural to expect the re-entry of the entrepreneur into the ice industry and the building of small plants in response to ice demands in specific localities. In 1933, all low plant construction records in the ice industry were smashed. (See Table III.) Only 54 plants were built, with an average capacity of 20.8 tons a day, creating a capacity increment of only 1,125 tons a day.

TABLE III. TOTAL NUMBER OF PLANTS AND NEW CONSTRUCTION

Year	Total Number of Plants*	Total Daily Capacity in Tons*	Yearly Increment in Num. of Plants	Yearly Increment in Daily Capacity in Tons	Average Size of New Plant in Tons per Day
1904	2,218	66,220			
1904–9	.....	.....	156	10,156	65.0
1909	3,000	117,000			
1909–11	.....	.....	203	3,078	15.2
1911	3,406	123,156			
1911–14	.....	.....	280	11,681	40.8
1914	4,245	158,200			
1914–19	.....	.....	174	5,933	34.0
1919	5,117	187,864			
1919–22	.....	.....	128	11,675	91.5
1922	5,500	222,891			
1923	5,747	245,891	247	23,000	93.4
1924	6,025	258,940	278	13,049	48.0
1925	6,262	265,759	237	6,619	27.9
1925–27	.....	.....	538	12,120	22.6
1927	7,338	290,000			
1928	7,474	318,405	136	28,405	209.0
1929	7,588	332,816	114	14,411	126.0
1930	7,651	349,342	63	16,526	262.0
1931	7,714	354,412	63	5,070	80.5
1932	7,828	366,015	114	11,603	120.0
1933	7,882	367,140	54	1,125	20.8

* 86 *Ice & Refrigeration* 307.

Such new "lows" were established without the aid of Article XI of the Ice Code. Such low increment in ice plant capacity was the economic response to ice demands by the entrepreneur. Only the entrepreneur who has thoroughly studied the demands of his community now seeks admission into the ice industry. He does not build unless he believes that he can so earn his livelihood. Ice is a local industry. Therefore his judgment and faith, which cause him to choose to enter the ice industry, must be respected and honored. The history of the ice industry does not accuse him of being an unnecessary and uneconomical creator of production facilities. The vested interests in the ice industry do, however, view the entrepreneur with disdain because he complicates and prevents their monopolistic

[11] *Financial Policy of Corporations*. Third edition. New York: The Ronald Press Company, 1934, p. 885.
[12] *Ibid.*, p. 887.
[13] *Ibid.*

machinations. Representatives of the vested interests, who for years have fixed prices to the detriment of the consumer, and who have failed to achieve the monopoly by their own efforts, wrote Article XI. They inveigled the President into assisting them in the achievement of their monopoly and into arbitrarily denying and unreasonably curtailing the common right to engage in a lawful private business. But the *imprimatur* of the President was not sacrosanct in the eyes of the United States Supreme Court. It declared all codes unconstitutional.[14] The Ice Code is included and the Federal Courts have again frustrated the plans and the monopolistic hopes of the trade association.

The Supreme Court of the United States declared that the Congress cannot delegate its legislative authority to trade or industrial associations and questioned the wisdom and beneficence of the trade or industrial associations which seek to formulate a law for the rehabilitation and expansion of their trade or industry. Mr. Chief Justice Hughes in his opinion in the Schechter case writes, "The codes may, indeed, cover conduct which existing law condemns, but they are not limited to conduct of that sort."[15] It is the contention of the author that Article XI covered "conduct which existing law condemns."

Economically the justification for Article XI was its potential power to curb the promotor-speculator. It was the banker-promotor who recklessly and ruthlessly created excess ice capacity as an uneconomical by-product of his scheme to promote the sale of securities. If this promotor-speculator is dead, if his technique has been subdued by the Securities Exchange Act, then Article XI of the Ice Code was merely a monopolistic instrumentality of interests who sought to enhance their speculations by crying, "No admission, my little man. We have sufficient production capacity and we wish to benefit by all the 'top production' possible."

[14] *U. S. v. Schechter Poultry Co.* (decided May 27, 1935).

[15] *Ibid.*

ANALYZING THE MARKET OF MAIL ORDER HOUSE RETAIL STORES

By RALPH CASSADY, JR., AND HAROLD M. HAAS

I. Information about the Consumer

ONE of the most important trends in the field of merchandising economics during the past decade has been the securing of additional and more reliable data concerning the consumer. While considerable progress has been made, the field is vast and there is still much to be learned. Such information is certainly worth striving for, however, because only through such data can a completely intelligent production and merchandising job be accomplished.

The present analysis has for its general purpose the disclosing of consumer information; it is interesting, however, not only from the point of view of results but from the standpoint of method as well. It illustrates rather clearly a method of utilizing a minimum amount of field data as a basis for a rather broad desk survey. The authors feel that the method is perhaps just as interesting as the results obtained, so they will set down the details of procedure.

Purposes of the Survey.—More specifically, the purposes of this survey were:

1. Obtaining definite information as to how far customers drive to shop; *i.e.*, ascertaining the limits of the market area of the institution studied.

2. Gathering, if possible, quantitative information in regard to incomes of customers.

As a basis for this survey we selected the retail stores (as distinct from the mail order divisions) of two nationally known mail order houses. These are designated as Stores "A" and "B," and were selected for several reasons:

1. Each maintains a completely stocked retail store in a large building located at a considerable distance from the main shopping districts of the Twin Cities. Furthermore, each store maintains, adjacent to the building, a large parking lot, and one can be reasonably certain that the cars parked there belong to customers of the store.

2. Since these stores make a definite appeal to purchasers of medium- and low-priced goods, definite information was sought as to the nature of the income groups to which such an appeal would be attractive. Would such an appeal, in other words, attract only those of the lower incomes, or would the savings offered be alluring to the higher income groups as well?

Methods of Procedure.—The first step was to send out field workers to the parking lots of each of the stores "A" and "B." For one full week they recorded the automobile license numbers of every car parked in each lot. At the end of the week there had been gathered a total of approximately 12,000 license numbers.

The second step in the procedure was to select at random two groups of numbers (each batch composed of at least a 10% sample) for each of the two stores. The purpose for taking two samples for each store was to use one as a check against the other. Then each group of numbers was arranged in

numerical order and sent to the state automobile license bureau, where names and addresses were recorded.

For the third step we utilized the Curtis publication, *City Markets*, 1932,[1] and, by means of a large Twin City map, first spotted each address, then consulted the Curtis map for the district classification. For each of these eight colored district classifications (four for each city) a median rental figure is given. These rental figures were then translated into median income data by means of the formula set down in the Brookings consumption study.[2]

On the master Twin City map referred to above, concentric circles were described, with each store as a hub, at half-mile and thenceforth at one-mile intervals. At the same time that the master map was consulted for spotting the location of the home of each patron, then the distance of residence from the store (as a crow flies) was easily determined. In any case where the customer lived outside the Twin Cities, the mileage from the Twin City municipal limits was determined from the state map, and to this figure was added the distance within the city as determined by the aforementioned procedure. Obviously the results of the use of this method will lean definitely toward the conservative side.

The final step in the procedure was to take the list of names and addresses of patrons of each store (as revealed by the research activities at the automobile license bureau) and by means of the use of a City Directory, record occupational information. The occupations were classified in a more or less arbitrary manner, but in a manner quite satisfactory enough for the type of data required. Thus, a carpenter, a brick layer, or a machinist would be classified as a skilled laborer; a lawyer or a doctor as a professional person; and a clerical employee, whether employed by a bank, warehouse, or a lumber yard, as a stenographer-clerk. Certain refinements were made in this breakdown which will be revealed below.

Thus, by means of a minimum amount of field work, there became available data concerning the distances traveled to each shopping institution, the income districts in which the customers of each store reside, as well as the occupations of the several patrons.

II. Location of the Market

Metropolitan District.—The Twin City market (the market found within the city limits of the two cities, Minneapolis and St. Paul) is composed of 184,945 families—the total population being 735,962 according to the United States Census of 1930.

[1] Latest edition. The book is made up of statistical information concerning the thirty-five larger cities in the United States. For each city there is a map which indicates, by means of a color scheme, the various types of income districts. Thus, say the Curtis people, "Red, Yellow, Green, and Blue represent four distinct types of neighborhoods, differing in average buying power and in average education." That the rental and valuation data upon which these district classifications are based are reasonably accurate there can be little doubt. Originally the data were gathered by the method of actually calling on and requesting the information from householders, after which an average was struck off for each block and boundaries drawn. The Curtis Company employs much the same method when, from time to time, it sends crews into the territory for the purpose of checking changes. The data upon which we are basing our study were compiled with a great deal of care and are unquestionably adequate for the purpose of this study.

[2] Leven, Maurice, Moulton, Harold G., and Warburton, Clark, *America's Capacity to Consume*. Washington: The Brookings Institution, 1934, p. 223.—"For rents from $400 to $2,500 the estimated relationship between rents and incomes may be represented by a straight line I = 5.15R in which I is income and R is rent."

Table I is designed to show some of the pertinent data in regard to this market. The Roman numerals I to IX indicate the classification as laid down by the Curtis Publishing Company—I being composed of the most desirable residential sections in Minneapolis, II the most desirable in St. Paul, III the second most desirable in Minneapolis, *etc.* The number IX grouping combines the business sections of the two cities.

Under each classification in Table I is shown the percentage of families to the Twin City total, the median rentals, workers. In classifications V and VI are included districts, the residents of which are skilled, semi-skilled and unskilled workers, with perhaps a greater proportion of the last named group. In the districts included in classifications VII and VIII, we should expect to find those families with the lowest incomes.

TABLE I. TWIN CITY MARKET DATA*

	Rental District Classification								Combined Business District
	I	II	III	IV	V	VI	VII	VIII	IX
Percentage of families to total in Twin Cities	20.8	12.8	25.6	11.8	11.9	9.9	2.5	0.8	3.9
Median rental for each area	$49.00	$46.00	$35.00	$29.00	$27.00	$25.00	$23.00	$17.00	
Percentage of native white to total in area	79.40	78.66	65.15	65.53	60.42	61.00	47.57	39.93	
Percentage of foreign born white to total in area	20.37	21.19	34.09	33.30	36.15	34.89	52.21	50.72	
Percentage of colored to total in area	0.23	0.15	0.76	1.17	3.43	4.11	0.22	11.35	
Average number per family in each area	3.4	3.6	3.8	3.9	3.5	3.7	4.3	4.3	

* Compiled from *City Markets.* Philadelphia: The Curtis Publishing Company, 1932.

In general, then, Groups I and II are practically identical in composition, being made up in the main of high-class and middle-class residential districts. The main difference is that one is made up of districts within the confines of the city limits of Minneapolis, while the other comprises districts located in the city of St. Paul. The same situation obtains in regard to Groups III and IV; V and VI; and VII and VIII. The districts falling into classifications III and IV are in general occupied by middle-class residents whose occupations are skilled, semi-skilled and unskilled trades, and salaried clerical composition of the population, and the average number in each family. It will be noted that the larger percentages of families are to be found in the first six classifications.

TABLE II. PERCENTAGE DISTRIBUTION ON BASIS OF LOCATION OF RESIDENCE OF "DRIVE-IN" CUSTOMERS

	Store "A"	Store "B"
St. Paul	4.5	57.2
Minneapolis	77.5	14.7
Outside Twin Cities	18.0	28.1
	100.0	100.0

We come now to the results of our own survey. Table II shows quite clearly where the market for each of the institutions under discussion lies.

Needless to state, Store "A" is located in Minneapolis and Store "B" in St. Paul. There are several rather interesting observations to be made here. Both stores get their largest percentage of "drive-in" customers from their own respective cities. It will be noted that Store "A" seems to have been able to do little with its competitor's market. While the efforts of Store "B," in this regard, have been somewhat more successful than its competitor's, they have not been outstandingly effective either. This situation may be in part due to location and accessibility, and in part to indifference as to which store is selected for patronage. That is to say, a customer may prefer to buy at a mail order house retail store—may indeed insist upon it—but has no preference as to which of two concerns he visits. To put it in still another form, when a person thinks of a mail order house he may think almost simultaneously of "A" and "B," rather than of either one to the exclusion of the other. Such a situation suggests very strongly the existence of what one might term "joint good will." In each case, then, the bulk of customers come from the city in which the store is located.

Outlying Market.—One fact which appears somewhat significant is the difference between the two stores as regards customers from outside the Twin Cities. Store "B" seems to have a decided advantage in terms of comparative percentages. There are three possible partial explanations of this. In the first place, Store "B" is located on an artery of travel which is being fed directly by several important state and Federal highways. That is to say, this boulevard becomes the actual route of travel through the city. The General Outdoor Advertising Company's traffic count indicates approximately twice the traffic on this boulevard as on the one on which Store "A" is located, and it is logical to assume that a part of this difference is the result of out-of-city travel. A second possible explanation of the difference between the two stores is that Store "A" has a branch outlet within the city limits of Minneapolis which possibly takes care of some of the provincial trade. This perhaps is not a tremendously important factor because of the relatively limited stock of a branch establishment, but certainly may be of some significance. And third, there is possibly some advertising value accruing to Store "B" over Store "A" by virtue of its larger number of branch stores within a radius of one hundred miles of the Twin Cities. Store "B" has six as against its competitor's two. While it is impossible to evaluate the foregoing factors, each perhaps is not without some importance.

There are two important inferences which may be drawn from the data in Table II. In the first place, the management of each store, knowing where its market lies, is able to act more intelligently in the matter of addressing its consumer audience. It has the alternative of concentrating in the section from which the bulk of its customers come, or of attempting to attract patronage from outside its seemingly "natural" market. Secondly, the rather large percentage of customers from outside the Twin Cities in each case suggests the soundness of the policy of institutions of this type opening branch retail stores in smaller communities. This observation per-

haps applies more to Store "B" than to Store "A," but is true to a considerable degree for the latter as well.

Distances of Customers from Stores.—In Table III we have refined to a considerable degree the "distance data" from each of the retail institutions. Here, it will be noted, are data for each of the stores concerning the approximate distances of the customers' residences from the store patronized.

TABLE III. DISTANCE OF "DRIVE-IN" CUSTOMERS' HOMES FROM INSTITUTION PATRONIZED

Distances in Miles	Store "A"	Store "B"
Less than ½	5.8%	4.3%
½–1	12.5	7.2
1–2	24.3	21.3
2–3	14.1	15.5
3–4	8.3	6.6
4–5	6.0	10.4
5–6	4.7	5.6
6–7	2.0	3.2
7–8	1.0	1.4
8–9	2.1	0.8
9–10	0.3	0.3
10–20	2.7	4.1
20–30	3.2	2.9
30–50	4.0	5.3
50–100	4.1	5.9
100–200	4.2	4.4
Over 200	0.7	0.8
Total.....	100.0%	100.0%

In the case of Store "A," 18% of the total number of patrons studied live within one mile, 57% within three miles, and 70% within a radius of five miles. Indeed, almost 6% of the customers of this store come from within a radius of one-half mile, which suggests that the institution acts, in part at least, as a convenience goods outlet for the families living nearby.

Somewhat the same situation obtains with regard to "B" but to a somewhat lesser degree. In this case, 4% come from within one-half mile, 11.5% from within one mile, 49% within three miles, and 65% within five miles. In each instance it is interesting to note that a considerable percentage of automobile customers come from over fifty miles away—the figure for "A" being 9%, and for "B," 11%. This suggests the tremendous goodwill of the two institutions, and again the soundness of their policies in establishing well-located branch outlets.

Chart A which is based upon the material in Table III was prepared for the purpose of presenting graphically a comparison between percentage distribution of the two stores on the basis of the distance travelled. Obviously the point of comparison in each case is between the stores and not between the several ranges, because of the absence of uniformity in the latter.[3] This variation, of course, is due to the practical limitation which would make it impossible to continue the one-half mile classification throughout the series. From the chart it can be seen readily that there are similarities at some points; but at others, quite distinct differences.

In spite of certain differences which appear in some of the ranges there is, in general, a marked similarity between the two sets of data. Why there should be the substantial difference in the ½–1, 4–5, and 8–9 mile ranges, the authors find it difficult to state conclusively. A good portion of this difference, however, can perhaps be explained by the differences in population concentration. Thus we believe there is a more heavily populated area within a one-mile radius of Store "A" than within the same radius of Store "B." On the other hand the area 4–5 miles

[3] Comparisons may be made to a limited degree, however. Obviously all ranges between one and ten miles may be compared, but certainly not those up to one and those over ten.

from the former is perhaps somewhat less heavily populated than the comparable area for the latter.

Income Groups of Customers.—Having presented a picture of the location of the market, the next step in the survey had for its objective a determination of the income groups in which the patrons were to be found. The results are somewhat less tenable than the previous ones, but are perhaps justifiable if only from the standpoint of experimentation.

Table IV indicates the percentage of Twin City automobile customers for each of the nine classifications, and in addition shows the median income of dwellers in each of these groups as computed from the median rental figures by the method explained in footnote 2.

It should be emphasized strongly that no information regarding the income of any one person has been derived from this study. We know with reasonable certainty the median rental in each district. From the experience of the Brookings Institution it would seem that there is a rather definite relationship between rentals and income, a premise upon which we have based our computations. We

CHART A. PERCENTAGE DISTRIBUTION ON BASIS OF DISTANCES FROM RESIDENCES TO STORES

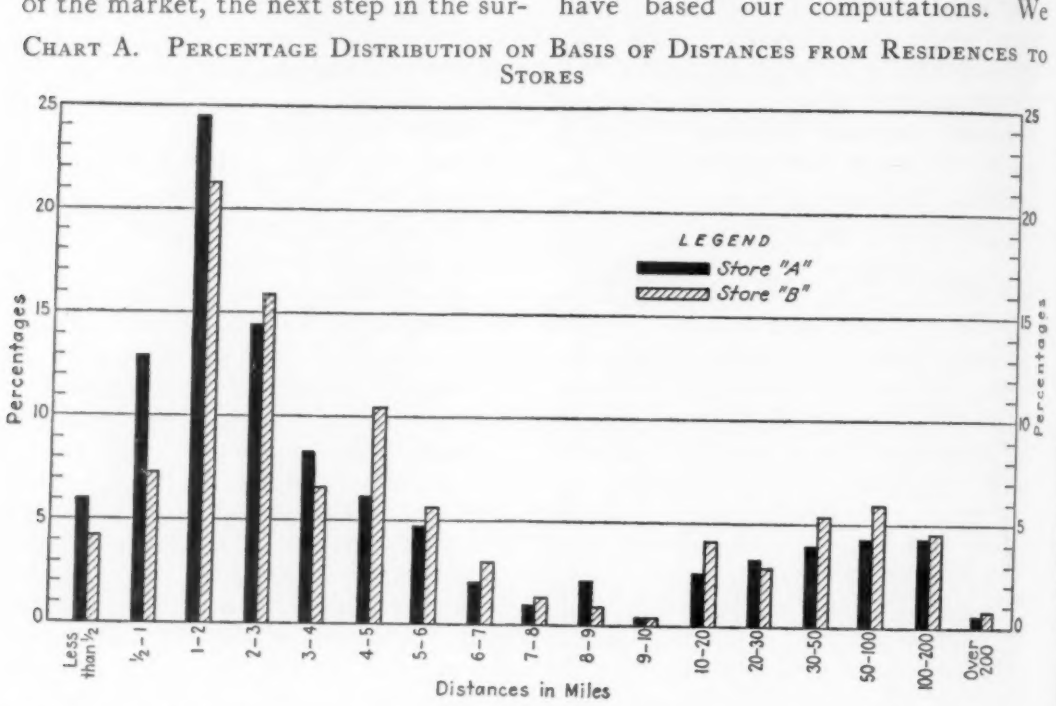


TABLE IV. COMPUTED MEDIAN INCOMES OF DWELLERS BY GROUPS AND PERCENTAGE OF "DRIVE-IN" CUSTOMERS IN EACH GROUP

Group	Median Yearly Income of Dwellers as Computed from Median Rentals	Percentage of Drive-in Customers in Each Group	
		Store "A"	Store "B"
I	$3,028	32.4	5.5
II	2,842	1.6	26.7
III	2,163	37.0	8.0
IV	1,792	2.5	31.1
V	1,668	18.0	4.4
VI	1,545	0.7	16.0
VII	1,421	1.6	1.0
VIII	1,050	0.1	1.0
IX	no income data	6.1	6.3
Total	.....	100.0	100.0

know, moreover, that a certain percentage of automobile shoppers live in each of these districts. Consequently, we feel it reasonable to assume that one is likely to find a greater proportion of people with higher incomes in the districts making up the first four classifications than in those making up the second four.

With these facts in mind, then, let us once again examine the figures in Table IV. It will be noted that, in the case of each store, over 30% of the automobile shoppers live in districts making up the first two classifications; over 70%, in those making up the first four. Indeed, only 2% fall into the classifications made up of the poorer districts included in Groups VII and VIII.[4]

Utilizing all available data, including those having to do with residents outside the Twin Cities, the percentage distribution into income districts appears as follows:

	Store "A"	Store "B"
High income	25%	24%
Medium high income	29	29
Medium low income	14	14
Low income	1	1
Business district (no income data)	4	5
Out of town (no income data)	27	27
	100%	100%

Occupational Classification of Customers.—In order to supply a rough check on the foregoing assumptions, a sample study of occupations of "drive-in" customers was made. The results, appearing in Table V, lend credence to the conclusions derived from the foregoing income survey.

TABLE V. OCCUPATIONAL CLASSIFICATION OF "DRIVE-IN" PATRONS

Occupational Classification	Percentage Distribution	
	Store "A"	Store "B"
Professional	8.6	9.5
Business executives	15.5	12.9
Teachers	4.1	4.2
Salesmen	16.4	14.4
Skilled labor	19.1	18.8
Stenographer-clerks	20.1	15.0
Common laborers	8.8	11.0
Miscellaneous	4.5*	10.0*
Unemployed	2.9	4.2
Total	100.0	100.0

* Detectives, dog-catchers, musicians, widows, jewelers, students, draftsmen, artists, motormen, pugilists, soldiers, *etc.*

It will be noted that, in general, the experience of the two stores is similar. Over one-fourth of the customers of each store fall into the professional-teacher-business executive class, about one-half into the skilled labor-stenographer-clerk-salesman classification, while only about one-tenth fall into the common labor division. The breakdown argues quite strongly toward the validity of the preceding income analysis; that is to say, apparently a large percentage of the patrons studied fall into higher-than-average income groups. Incidentally, the occupational breakdown suggests the possibility of the use of customer control based upon a much greater refinement of advertising appeals than is commonly used. In other words, merchandise of specific interest to certain groups could be publicized by means of a direct-by-mail campaign.

[4] It may be concluded by some that the total clientele might not follow this same pattern, as the data given applies only to automobile shoppers and thus may be somewhat selective. Automobile ownership as a selective index of income is of very questionable validity in the Twin Cities, however, as there is in this territory an average of one car for every 1.1 families.

Keeping the occupational classification in Table V in mind, it might be of interest to compare these figures with those of the total occupational pattern for the Twin Cities for the year 1930. The latter breakdown was adapted from one of the University of Minnesota Employment Stabilization Research Institute Bulletins,[5] and shows the following:

TABLE VI. OCCUPATIONAL CLASSIFICATION, TWIN CITIES, 1930

Professional and semi-professional workers	8.3%
Proprietors and officials (including government)	14.7
Skilled laborers	19.1
Clerical workers	25.8
Semi-skilled laborers	11.3
Common laborers (including servants)	19.5
Miscellaneous	1.3
	100.0%

It will be noted that while the classifications are not identical with those in Table V, they are close enough for direct comparison. By means of these figures it can readily be seen that the classification of "drive-in" customers of both stores is remarkably similar to the total occupational pattern of the Twin Cities. The "professional" group percentages are very close indeed, as are the figures for "proprietors and officials." Much the same similarity exists in regard to skilled laborers. There are, however, significant differences occurring in regard to clerical workers and common laborers. Both stores seem to attract as customers a somewhat smaller proportion of clerical workers and a very much smaller proportion of common laborers. This latter condition might be explained by the type of selective sample utilized. It might, on the other hand, be a revelation of the class of trade drawn to these two stores, or it might well be due in part at least to classification differences. For example, if a "teacher" classification be added to that of the "professional" in Table V, then the balance moves in favor of the stores. Likewise, if salesmen are included with clericals, the same condition obtains. If, on the other hand, the skilled and semi-skilled groups are combined in the total Twin City breakdown, there is a substantial balance in favor of the total over the store percentages in this classification. At least one generalization might be made in this connection: if we may accept "drive-in" patrons as representative of the class of all customers, the two stores under investigation draw their patronage in significant amounts from all walks of life and are not, as many think, trading institutions for lower income groups only.

Referring once again to the data in Table IV, it would seem that the bulk of the customers of both stores live in the better districts, and that thus many of them receive somewhat higher than average incomes. Data on family budgets obtained from the Brookings Institute study[6] show that families in the $3,000–$3,500 group spend over twice as much for food and three and one-half times as much for the upkeep of the home as do those in the less than $1,000 group. While much of the upkeep is in the form of rent, a higher scale of living probably leads to greater expenditures for home furnishings as well. Moreover, the higher income group spends three times as much for clothing, and seven times as much for miscellaneous items, as the group receiving an income of less than $1,000.

[5] Hansen, Alvin H., and Sogge, Tillman M., "Occupational Trends in Minnesota," University of Minnesota Press. p, 100.

[6] Leven, Moulton, and Warburton, *op. cit.*, p. 257.

Such data are valuable to the merchandise manager as a guide to the determination of his merchandising and advertising policies. In the case of the one group spending more than another, either or both of two things might occur. The higher income group may buy more merchandise, but it also may buy higher-grade merchandise. The data as presented are interesting in the light of the fact that one of the retail institutions under discussion is now in the process of "trading up." Until comparatively recently it has had only two price lines. Merchandise sold at the lower price line was what might be termed a good value—low in price but of fairly good quality. Merchandise sold at the higher price line was of better quality, perhaps appealing to the lower middle income groups. They are at present adding a third price line in many departments, a line at a somewhat higher level than the other two. The merchandise in this price group is claimed to be of outstanding quality and appearance, and although this price is the highest of the three, it is supposed to be substantially lower than that of the store's loop competitors. This one firm then apparently now realizes that they are attracting a somewhat higher income group than they originally supposed. Indeed, it may be that the make-up of their clientele has changed somewhat during the past several years. Regardless of the reasons, however, they are now in the process of putting in a line which will more nearly serve the requirements of the higher income group.

III. Conclusions

The conclusions arising out of the preceding exposition fall naturally into two classes: (1) those having to do primarily with the method of obtaining the data, together with suggestions for a methodology employing the devices which have been utilized; (2) those which may be derived from the data themselves. The most important of the conclusions in these two classifications are as follows:

1. The method employed in this study is of undoubted value academically, because through it certain factual information is revealed on a subject about which little is known. It contains suggestions, moreover, of the need for further analysis, in order to verify and confirm data which at present may be of doubtful validity. To be more specific, the method was successful in unearthing rather definite information concerning distances traveled by patrons, but is somewhat less definite in supplying incontrovertible data concerning the income of customers. But even here the evidence supplies a considerable measure of validity. Furthermore, it is valuable from an experimental angle, in that it is suggestive as regards a method to be used for further study along similar lines.

2. Certain other devices might well be used for the purpose of verifying the results obtained. The first line of approach might be to select a sample from each of the groups of patrons who seem to fall into certain income classifications and attempt to get income data by means of personal interviews or mail questionnaires, or by the stores themselves by means of an analysis of purchase records.

3. From the standpoint of the individual concerns, the method may be somewhat less contributive, as some of the data revealed is undoubtedly available in another form. Certain phases, however, would be of unques-

tionable value. For example, if the stores under discussion confirm our conclusion that a large percentage of their customers fall into relatively high income classifications, such information might be used as a basis of controlled direct-by-mail campaigns. As a matter of fact, the latter sales device could be used as a basis for such an experimental survey. In other words, the purpose would be to seek an answer to the question: Will a direct-by-mail campaign bring in a larger average response from the families living in the higher income districts?

4. The information concerning the location of the residences of "drive-in" patrons is valuable, but may be even more so if by means of further analysis the same tendencies were found to exist in the case of "non-drive-in" customers. The data revealed suggest that store location is of tremendous importance to these institutions, and that therefore intra-city branch outlets may be employed to advantage as a method of increasing sales.

In summarizing, the authors suggest the use of some such method as presented here by those stores doing a strictly cash business, in order to enable them to obtain the sort of information about the incomes and occupations of the customers that has always been available to service stores through their credit departments. In any event, it is hoped that this study will prove of interest to those individual retail establishments that are constantly endeavoring to develop their own markets, as well as to those students of marketing who may find in it some slight measure of confirmation of their own convictions as to the nature and buying habits of mail order retail store clientele.

AN INDEX OF BUSINESS ACTIVITY

MANUFACTURING VALUES AND PAYROLLS

By C. H. WHELDEN, JR.

NOT so many years ago all our indexes of business activity were constructed in terms of dollar values. As analysis proceeded and index-number construction was refined, we were presented with various indexes of the volume of business activity. This was a gain. Nevertheless, there are separate and distinct variations in volume and in price which require separate consideration for a proper understanding of changing conditions of business; and the subsequent disappearance of many indexes of value was a loss. The quantity and price elements in business have their individual importance, but the composite value element also has an importance of its own. In a financial age such as ours, value is the keystone of the economic arch. For capitalization, credit extension, and cost recovery it is value which offers the key to understanding and control. In depression, when debt charges, taxes, and other overhead burdens weigh more heavily, the value-level of business activity acquires added significance. When either the equity or the social efficiency of the division of the social product is under question, the value of output and income is, among other important considerations, one of first concern.

Monthly Index of the Value of Manufacturers, 1919–1934

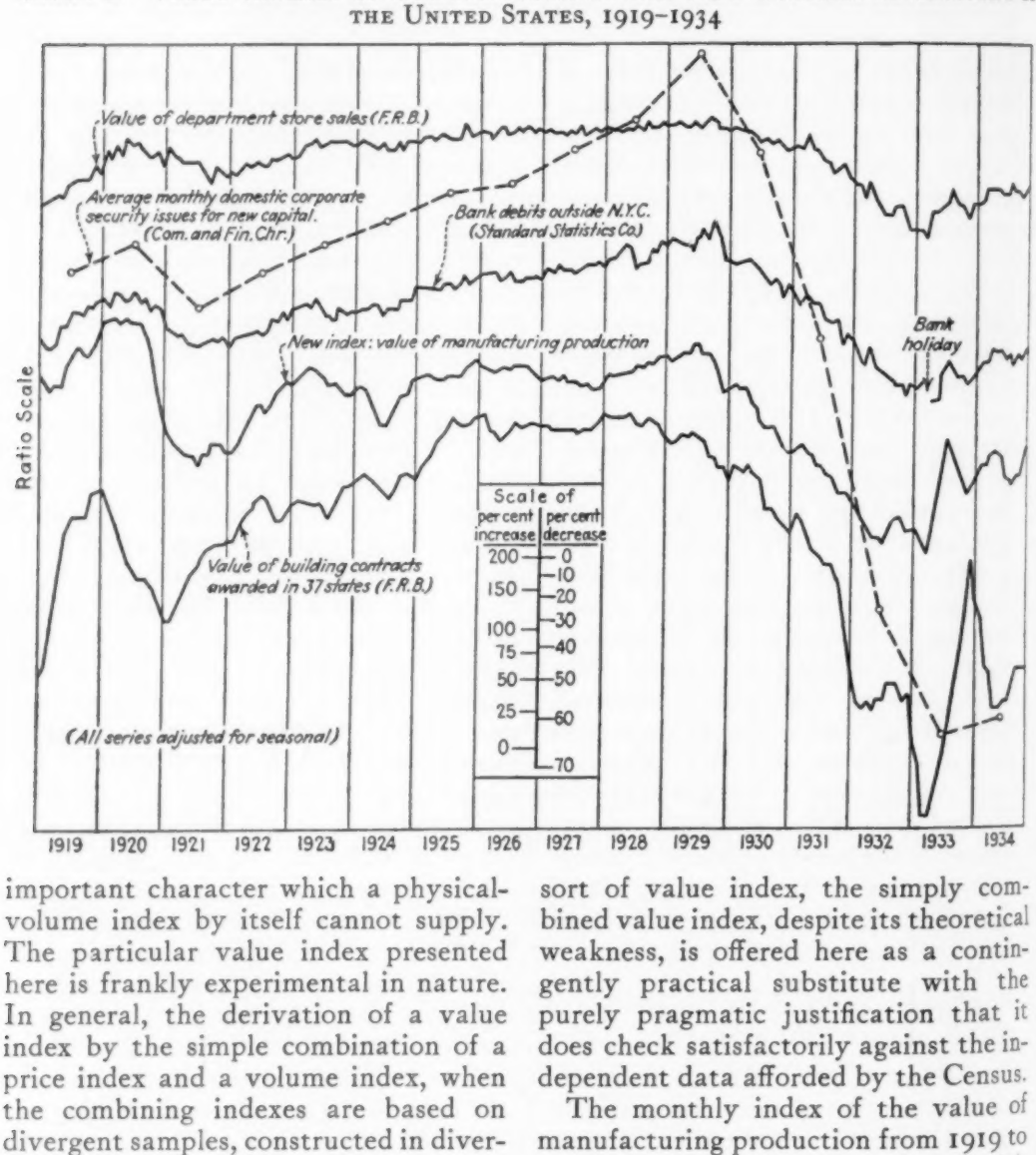
To fill one of the widest gaps in our current reporting of value variations in business activity, a simple but apparently effective monthly index of the value of manufacturing production in the United States is presented here. The form of the index was determined after considerable experimenting and subsequent checking against a control series afforded by the biennial Census of Manufactures since 1919. The index is formed by combining the Federal Reserve Board's monthly index of the volume of manufacturing with the Bureau of Labor Statistics' monthly index of the price of finished products. For direction of movement in the biennial periods the correspondence is exact between this new index of the value of manufacturing production and the Census data for the value of manufactured products, except for the change from 1925 to 1927 where the value reported by the Census was practically the same at the two dates, rising by less than one-tenth of 1%, while the new index showed a small decline. For extent of movement the new index is uniformly more sensitive than that derived solely from the Census data, rising or falling in slightly greater degree in every instance; the range of difference in this respect is from 1% to 5%. The general trends of the two sets of measures are alike. We have then a rather sensitive index of the value of manufacturing production available on a monthly basis as required for a record of cyclical patterns and of current developments, which conforms in very reasonable degree with the more exhaustive but highly

intermittent record yielded by the biennial surveys of the Bureau of the Census.

There is no intent to imply that any value index is a better record of business activity than is a physical-volume index, but merely that a value index will offer supplementary information of

gent or non-reciprocal systems of weights, is a most dubious statistical procedure. To possess *a priori* reliability the value index should be constructed from an independent sample of unit values. With neither time nor other resources at present available for the construction of this more rational

CHART I. VALUE INDEXES OF BUSINESS ACTIVITY AND NEW BUSINESS INVESTMENT IN THE UNITED STATES, 1919–1934



important character which a physical-volume index by itself cannot supply. The particular value index presented here is frankly experimental in nature. In general, the derivation of a value index by the simple combination of a price index and a volume index, when the combining indexes are based on divergent samples, constructed in divergent forms, and equipped with diver-

sort of value index, the simply combined value index, despite its theoretical weakness, is offered here as a contingently practical substitute with the purely pragmatic justification that it does check satisfactorily against the independent data afforded by the Census.

The monthly index of the value of manufacturing production from 1919 to 1934 is shown on Chart I, together with

several other value indexes of other phases of business activity. The new index reveals a slightly upward drift only in the middle period from the peak of 1923 to that of 1929, but a downward drift between any other pair of comparable end-years, as for example between the prosperity high of 1920 and the prosperity high of 1929 or between the depression low of 1921 and the depression low of 1932. The general trend in the value of manufacturing production has been, in brief, downward since the culmination of our post-war inflation.

There is a sharp contrast, as between the depression of 1920 to 1921 and the depression of 1929 to 1932, in the character of the decline in the value of manufacturing production which is consistent with the differences shown as between these two periods by other phases of business activity. In the earlier depression the value of manufacturing production dropped abruptly by more than 55% in one year and then started to recover. In the last depression it was two years and a half, *i.e.*, up to the end of 1931, before the value of manufacturing production had declined by as much as 55%, but it then continued to decline for another six months. The decline was thus covered in one year in the first case but ran for three years in the second. While the value of manufacturing production at the depression low of 1921 was somewhat less than half of that value at the prosperity high of 1920, at the depression low of 1932 it was slightly less than one-third of what it had been at the prosperity high of 1929. (The slightly lower level reached in March, 1933, at the time of the temporary closing of the banks is disregarded here, and the middle of 1932 is taken as marking the effective low of the depression.) These variations in the value of manufacturing production are merely additional evidence of the well recognized fact that this last major depression, despite governmental attempts from 1930 to 1932 to arrest its course, was more severe as to both duration and extent than was the one preceding.

The pre-code speculative rise, starting in April, 1933, in anticipation of higher costs under the codes, carried the value of manufacturing production 100% above the low point of the bank holiday in March; at this level, however, the value of manufacturing production was still less than at any time between the first quarter of 1922 and the last quarter of 1930. About a third of the pre-code gain had been lost by the end of 1933. A renewed rise through the spring of 1934 had been almost completely lost, apart from any seasonal recession, by early autumn, but this loss had been regained at the end of the year. At the spring peak of 1934 the value of manufacturing production was about 70% above its 1932 low, less than 10% below the pre-code speculative peak of 1933, and at practically the same level as in the bottom of the depression of 1921. The value of manufacturing production is currently only half of what it was at the middle of 1929. The problems of capitalization, valuation of assets, and overhead charges, in the form precipitated by the depression, have certainly not received any far-reaching, general, and automatic solution as a result of this degree of recovery in the value of manufacturing output.

Comparison between the Value of Manufactures and Other Value Indexes

There are a number of interesting points of comparison between the index

of the value of manufacturing production and the other value indexes of various phases of business activity shown on Chart I. The nearer any phase of business activity is to the final consumer the narrower, generally, are its cyclical variations. The index of department store sales, indicative of retail trade, shows considerably narrower cyclical fluctuations than are found in the value of manufacturing production. The fluctuations in bank debits outside New York City—the best single-series indicator of the dollar level of that general business composite which includes retail and wholesale trade, general industrial activity, and some financial operations—occupy an intermediate position between the narrower variations in the dollar value of retail trade and the broader variations in the dollar value of manufacturing output. The construction industry, as represented by the value of building contracts awarded, shows in general the widest cyclical variations among the several phases of business activity portrayed in the chart, although in the depression of 1920–1921 the decline was not so great as the decline in manufacturing values.

Up to 1933 there is a clear tendency for variations in manufacturing values to be anticipated and foreshadowed by similar variations in construction values. The construction index started to decline at the beginning of 1920, the manufacturing index in the middle of 1920; the recovery in construction began in the first quarter of 1921, in manufacturing after the middle of the year; after the middle of 1922 there was a moderate recession in the construction index which was not matched in the manufacturing index until the second quarter of 1923; the upward movement in construction was resumed in the middle of 1923, but in manufacturing not until the middle of 1924. In 1926 and 1927 the construction index flattened off, but at this point did not anticipate the decline in manufacturing values in 1927; the major decline of the last depression began for construction values at the middle of 1928, for manufacturing values at the middle of 1929; the preliminary indications in 1932 of what might be a turn towards recovery appeared slightly earlier in the construction index than in the manufacturing index. Since 1932 the variations in construction values have ceased to show, at least for the time being, this anticipatory relationship with manufacturing values, and the movements of the construction index, moreover, have been particularly violent. The construction index fell with the manufacturing index during the culmination of banking troubles in the first quarter of 1933, was delayed one month beyond the manufacturing index in starting the pre-code speculative rise, but then extended that rise through the whole remainder of the year and in 1934 fell back abruptly to its level of 1932. It is obvious that under present conditions the fluctuations in construction values cannot be used as forecasting indications for changes in the value of manufacturing production.

The value indexes of the chart show what may be called a general prosperity period running from 1923 to 1929 inclusive, except that for the construction industry the prosperity period is more properly designated as covering the years 1922 to 1927. This general prosperity period includes the cyclical recession of 1924 and the less pronounced recession of 1927, but the description of the period as a whole as one of generally mounting prosperity

is obviously permissible. From 1922 to 1927, construction values accomplished a greater general rise than did any of the other classes of business value in the period from 1923 to 1929, but they were declining in 1928 and 1929 while the others were still completing their rise. The next greatest general rise for the prosperity period was shown by the debits index which was pulled up, particularly in 1928 and 1929, by its inclusion of some part of the activity in the strictly financial field. The value of manufacturing production rose distinctly less than the general business values covered by the debits index, but distinctly more than the dollar value of retail trade as shown by the index of department store sales. These differences in the five- to six-year drifts of the various classes of business values, particularly as they developed to their more extreme forms and with the possible exception of the early part of the decline in construction after 1927, may justly be taken as partial indications of that loss of balance which was becoming cumulative within the economic system in these years and which was leading business towards the difficulties that have followed 1929.

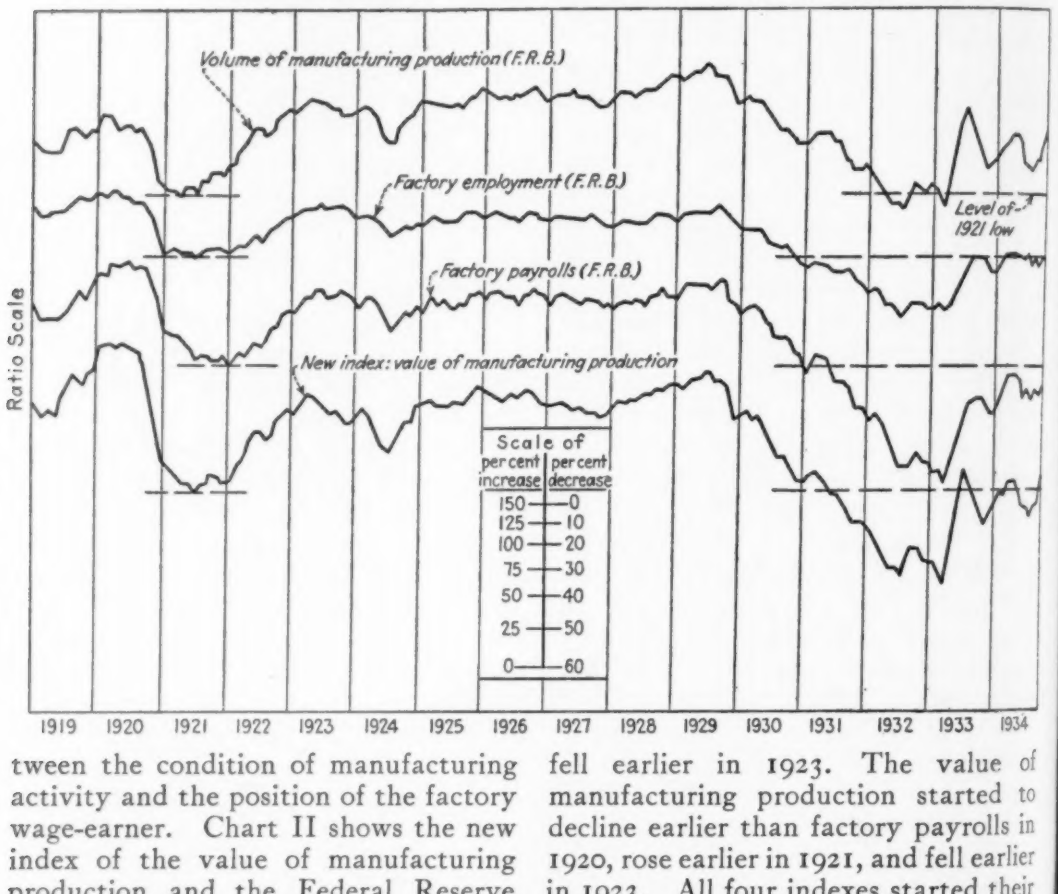
By the middle of 1934 a partial restoration of the balance among business values had been accomplished, but in two particulars, so far as shown by the chart, it was still seriously lacking. The period from 1922 to 1924, just after the depression of 1921 and just at the beginning of the prosperity period of 1923 to 1929, may be taken as a reference period in this connection. Compared with the relative positions of the value indexes in the period 1922 to 1924, the value of retail trade at the middle of 1934 was slightly lower in relation to the value of general business as measured by bank debits, and the value of manufacturing output was somewhat more noticeably lower in relation to that measure of general business. The value of manufacturing output was consequently slightly lower in relation to the value of retail trade; in respect of these values, the 1934 adjustment to the relative levels of 1922–1924 was rather good. Value returns to the construction industry, however, are still seriously out of line with the value levels of other phases of business activity. They are only 40% of the amount necessary to give an adjustment in relation to general business comparable with that prevailing from 1922 to 1924.

The other particular in which balance is seriously lacking relates to the amount of new business investment. The chart shows for each year the average monthly offerings of securities by domestic corporations for new capital. It is apparent that from 1923 to 1929, and particularly from 1926 to 1929, this new business investment proceeded at a much more rapid rate than the accompanying growth in business values. With the recession in business values after 1929 a relatively great decline in new business investment was to be expected. The decline in this investment has not simply been relatively great; it has been terrific. In 1934 new business investment has been slightly less than 10% of the amount necessary to bring it into the 1922–1924 adjustment with the value level of general business. It is clear that the net social effect of restrictions on the investment market will deserve careful analysis and evaluation in connection with any plans for fostering or sustaining the recovery of business values.

Value of Manufactures and Position of the Factory Wage-earner

The availability of this new monthly index of the value of manufacturing production offers an opportunity for a number of interesting comparisons between the condition of manufacturing activity and the position of the factory wage-earner. Chart II shows the new index of the value of manufacturing production and the Federal Reserve Board's index of factory payrolls, and gives in addition for purposes of further comparisons the Federal Reserve Board's indexes of the volume of manufacturing production and of the volume of factory employment.

CHART II. INDEXES OF THE VOLUME AND THE VALUE OF MANUFACTURING PRODUCTION AND EMPLOYMENT, UNITED STATES, MONTHLY, 1919–1934



In the period 1919 to 1934, factory employment has generally been more sluggish in its cyclical fluctuations than has the volume of manufacturing production, and factory payrolls similarly more sluggish than the value of manufacturing production. The volume of manufacturing production started to decline earlier than factory employment in 1920, rose earlier in 1921, and fell earlier in 1923. The value of manufacturing production started to decline earlier than factory payrolls in 1920, rose earlier in 1921, and fell earlier in 1923. All four indexes started their rise in 1924 at just about the same time. On the decline which began in 1929, volume of production again led employment, and value of production led payrolls. All four indexes were in close agreement in showing signs of the possible end of the recession in 1932 and again in rising from the bottom of the bank holiday in March, 1933;

but on the decline from the pre-code speculative peak of 1933, and on the renewed rise to the late spring of 1934, employment and payrolls resumed their lagging positions behind the volume and value of manufacturing production. All four indexes were again together in starting the decline after the spring of 1934.

In this relative sluggishness of movement the extent of the respective fluctuations offers a more important contrast than the timing. With the inclusion of the separately variable price factor the two value indexes have fluctuated more widely than the respective volume indexes, value of production more than volume of production, and payrolls more than employment. This much would be taken rather for granted. It is also true, and certainly much less commonly realized, that the two indexes relating to the condition of manufacturing activity have fluctuated more widely than the respective indexes relating to the position of the factory wage-earner, the volume of production more than employment, and the value of production more than payrolls. Using round figures, from 1920 to 1921 production fell 35% and employment 30%; from 1921 to 1923 production rose 70%, employment 35%; from 1929 to 1932 the decline in production was 55%, in employment 45%; from the temporary low of March, 1933, to the temporary high of May, 1934, production came up 55%, employment 40%. In similar fashion the value of manufacturing production fell 55% against 40% for payrolls, from 1920 to 1921, and then between 1921 and 1923 rose 70% against a rise of 50% in payrolls. After 1929, however, a difference appears in the relative fluctuations of value of production and payrolls, the variation in the payrolls being practically as extensive as the variation in the value of production. From 1929 to 1932 the value of production declined 70% while payrolls, despite all cries for maintenance of wages, declined 65%; from the low of March, 1933, to the high of May, 1934, the value of production rose 80% while payrolls, through influences certainly ascribable to the New Deal, also rose by exactly the same percentage.

To the extent that the relative sluggishness of employment and payrolls exists, both as to timing and width of fluctuations, labor takes on the character not of a variable direct cost in manufacturing nor yet of a strictly fixed overhead cost, but the character of what might be called an inelastic direct cost approaching the nature of an overhead cost in some degree. The employing manufacturer in this respect gains relatively to his wage-earners in a period of rising business activity and a growing value product, but loses ground relatively to them in a period of declining business activity and a shrinking value product. In other words, to the extent that the cost of labor is in the nature of an overhead cost, the manufacturer finds an extra obstacle in the way of profits in times of a diminishing product but has an extra opening to profits in times of an expanding product. One apparent intent of the New Deal is to close this extra opening. The question may be raised if this may be done fairly without also removing the extra obstacle in times when product is diminishing. Exponents of the New Deal must satisfy themselves, at any rate, that the implicit reduction in average profits over a full cyclical period, if the extra opening is closed and the extra obstacle remains, will not be so great as to discourage the manufacturer from provid-

ing any payroll at all on his own initiative.

The relative sluggishness of the two indexes relating to the position of the factory wage-earner appears also in the general drift of variations through what may be called the prosperity period, or perhaps the "new era," of 1923 to 1929. Apart from the cyclical fluctuations in this period, volume of production showed a net gain of 20% between the peak of 1923 and the peak of 1929; factory employment, however, declined 1% as employers continued to adjust production costs to meet conditions of the labor market in the years immediately following the World War. Between these same peaks the value of manufacturing production increased 14%, while the net gain in factory payrolls was 4%. In terms of the labor market alone there was thus a general advantage for employers, as against the factory employees, during this prosperity period.

Another aspect of the changing relationships among manufacturing production, employment, and factory payrolls is seen in connection with the respective movements of these factors since 1929 against the background of their low levels of 1921. The major importance of the price factor in this latest depression, as revealed through the two value indexes, also becomes apparent. The volume of manufacturing production did not fall to the level of its 1921 low until early in 1932; it was then, and again in the first quarter of 1933, only very briefly below that level; and since March, 1933, it has been continually and considerably above it. Factory employment had got down to the level of its 1921 low as early as the last quarter of 1930 and remained well below it until the middle of 1933; at the top of the pre-code speculative peak in 1933, factory employment just came up to its low level of 1921, and on the renewed rise in the spring of 1934 it barely and briefly went above that level. The value of manufacturing production was down to the level of its 1921 low by the middle of 1931, dropped considerably below that level, and has since fluctuated around that level, exceeding it moderately in a few months at the top of the pre-code speculative peak of 1933 and at the top of the spring rise and again in December, 1934. Factory payrolls reached their low level of 1921 at the beginning of 1931 and dropped farther below that level than did any other of the factors; at the top of the recovery thus far since March, 1933, factory payrolls had not quite got back again to a level as high as the low level of 1921. Although currently on lower levels relative to 1921 than either the volume or the value of manufacturing production, factory employment and factory payrolls have been better maintained in 1934 following the recession from the pre-code speculative peak of 1933; in 1934 these latter indexes have exceeded and then held well up to their high points of 1933, while the volume and value of manufacturing production have shown a net recession between the high points of these two years. In this aspect, then, a visible effect of the New Deal also appears, pointing to the intent to close that labor-opening to profits which the employer has been accustomed to enjoy when the general movement of business activity was upward, as an offset to the labor-obstacle to profits he has had to face when the general movement of business activity was downward. It may be wondered if the net recession in manufacturing activity, both volume and value, since the summer of 1933

has not been due in part to the code-impelled obstruction of this hitherto normal channel of one of the rivulets of profits.

Factory Employment, Wages, and Purchasing Power of Payrolls, 1919–1934

The more important of these relations between the condition of manufacturing production and the position of the factory wage-earner are briefly and more directly summarized by the two upper curves on Chart III. One additional element is also included on this chart, an index of the purchasing power of factory payrolls. The two upper curves are obtained, respectively, by expressing the index of factory employment as a ratio of the index of volume of manufacturing production and the index of factory payrolls as a ratio of the index of value of manufacturing production. The first measures directly the extent to which a change in employment exceeds, keeps pace with, or falls short of changes in the volume of output; it is an inverse picture of the volume of output per laborer employed. The second measures directly the variations in the general share of factory wage-earners in the value-product of manufacturing enterprise. The bottom curve on the chart, the index of the purchasing power of factory payrolls, is obtained by adjusting the index of factory payrolls for changes in the cost of living as estimated by the National Industrial Conference Board on the basis of a post-war family budget for wage-earners; it is an index of the aggregate *real* income of *employed* factory wage-earners taken collectively.

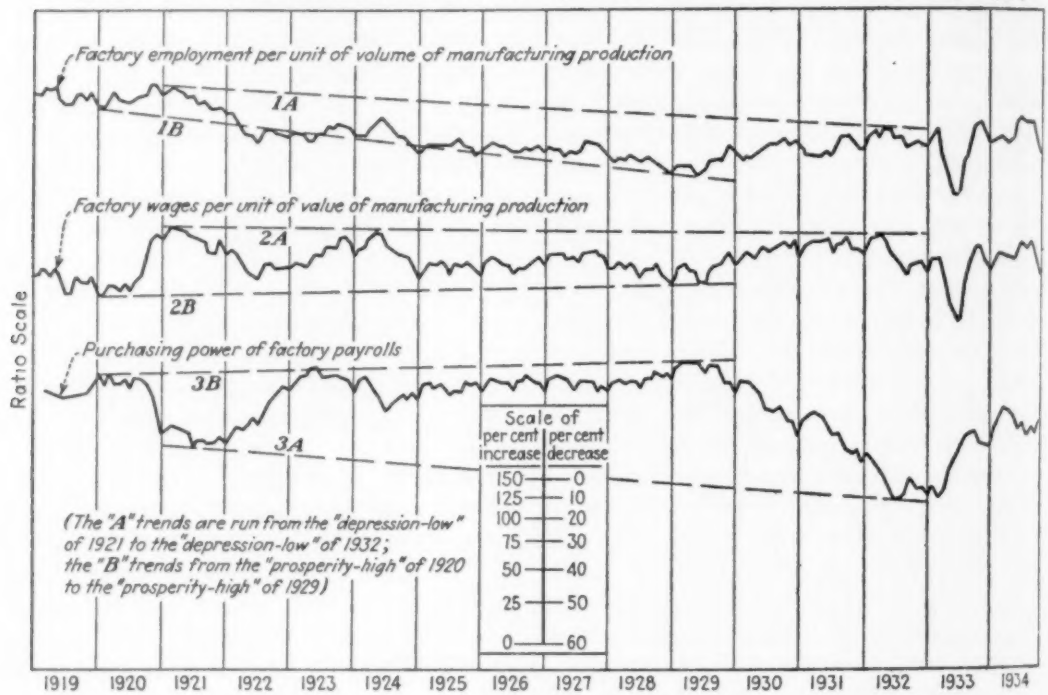
As indicated previously, the employment and wage ratios fall in cyclical prosperity and rise in depression; they are high in magnitude (and on the chart), at the time of the "depression low" in business, and low at the time of the "prosperity high" in business; this inverse relation between these ratios and the course of business activity is most clearly apparent, on the chart, between 1920 and 1924, and between 1929 and 1933. In depression the relative share of the wage-earner in the value-product of manufacturing increases as a greater labor force per unit of volume-output is kept on the payroll. This is the sense in which labor cost approaches the character of an overhead burden. In spite of the gain in the wage-earners' relative share of the product during depression, the employed wage-earners as a class fare better in an absolute sense during cyclical prosperity. The index of the purchasing power of factory payrolls shows that the real income of the employed factory workers rises in periods of prosperity and declines in depression.

In the general direction of movement of the three indexes on Chart III there appears no net gain for the factory worker in the period since 1919. Between the "prosperity-high" of 1920 and the "prosperity-high" of 1929 (the "B" trends on the chart) the employment ratio moves distinctly downward and the general decline is further substantiated by the position of the ratio at the pre-code speculative peak of activity in the middle of 1933; the same decline is also shown as between the "depression-low" of 1921 and the "depression-low" of 1932 (the "A" trends on the chart). The wage ratio, or the employees' share in the value-product of manufacturing, moved upward by a small percentage between the "prosperity-high" of 1920 and the "prosperity-high" of 1929, but between

the "prosperity-highs" of 1923 and 1929 it declined slightly, and the position of the ratio at the middle of 1933 marked a distinct net loss for the period; between the "depression-lows" of 1921 and 1932 this wage ratio shows no net change at all. The purchasing power of factory payrolls, however, shows a clear net improvement in the prosperity trend of either 1920–1929 or 1923–1929; but from 1929 to 1932 this purchasing power declined 53% as against a decline of only 33% in the depression of 1920–1921, and the depression trend of 1921–1932 consequently shows a substantial net loss which, in terms of the period as a whole, has not yet been effectively made up by the recovery since March, 1933.

Under the New Deal since March, 1933, there has been a slight net gain in the wage-earners' share of the factory output and a substantial gain in the real income of the employed factory workers as a class. Since the pre-code speculative peak of activity in the middle of 1933, when the employment ratio and the wage ratio were exceptionally low, these ratios have risen to and remained at what may be called their depression levels, but the purchasing power of factory payrolls has risen in the manner characteristic of a period of business recovery, standing in the spring of 1934 at a level 25% below its 1929 peak, with some loss appearing in the following months. These movements of the wage ratio and the purchasing power of factory payrolls in 1933 and 1934 bring to attention again the New Deal gain for factory workers, *i.e.*, for the employed workers as a class, but point also to the long-run question of how much of a burden of labor costs manufacturing industry can successfully be compelled to sustain.

CHART III. EMPLOYMENT AND WAGE RATIOS IN MANUFACTURING PRODUCTION, AND PURCHASING POWER OF FACTORY PAYROLLS, UNITED STATES, MONTHLY, 1919–1934


Factory employment per unit of volume of manufacturing production
1A
1B
Factory wages per unit of value of manufacturing production
2A
2B
Purchasing power of factory payrolls
3B
3A
Ratio Scale
Scale of
per cent increase
per cent decrease
150 0
125 10
100 20
75 30
50 40
25 50
0 60
(The "A" trends are run from the "depression-low" of 1921 to the "depression-low" of 1932; the "B" trends from the "prosperity-high" of 1920 to the "prosperity-high" of 1929)
1919 1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933 1934

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CONTRIBUTORS TO THIS ISSUE

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